

Authentic

SCIENCE FICTION MONTHLY 1'6d.

Nº42

MARS AT LAST!
MAN SETS UP
HIS FIRST BASE

This month's
FEATURED NOVEL

**HIDDEN
SHEPHERDS**
by BRYAN BERRY

Short stories by: JOHN CHRISTOPHER
WILLIAM S. KALS

H. B. HICKEY
LEONARD PRUYN

VOLUME I No. 42
ONE SHILLING and SIXPENCE

Authentic

SCIENCE FICTION MONTHLY

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H.J. CAMPBELL

Writes...

This month we carry the first section of a new regular feature—The March of Science. I'm hoping that it will give the flavour of what is going on in the world of science today. So much of what happens in modern laboratories never reaches the public eye; our new feature will help in some small measure to bridge that gap—and bridging gaps seems to be the fashion these days.

The March of Science is one of the ways in which I am using up the sixteen extra pages that will be a regular thing from the previous issue onwards. Other ways are a lengthened science article, separate fiction and non-fiction book reviews, and fanzines reviews. And, of course, more readers' letters, since this feature seems to be extremely popular.

By the way, I'm discontinuing the practice of giving away six technical books for the best letter published each month. For one

thing the supply of these books is not inexhaustible, and for another thing, too many readers have been sending us highly laudatory letters with the expressed intention of winning the books. I don't want that kind of letter, and to remove the temptation I am removing the reward. All letters are now on an equal basis.

Now that we are running something like thirty pages of features, there's a bit of room to move around and try some experiments. One experiment I've thought of myself is the Analysis at Home feature in this issue. It's an instructional article, part of a short series. Does this sort of thing please you, or *must* you have nothing but informative-entertainment articles? Let me know. And let me know if you've any ideas for a regular feature or for single articles. Don't, of course, ask me to run a full-colour supplement or anything like that. We've got to

keep the cost down within reason, you know.

Now about the stories. Bryan Berry returns after not too long an absence with the long novel, *Hidden Shepherds*. This is rather unlike some of his earlier stories and takes the form of an adventure yarn, without too much mental struggling going on. Then John Christopher, the Atlantic Award author who has appeared in every major science fiction magazine and anthology on both sides of the Atlantic, gives us *Aristotle*—an undeniably Christopher story.

And once again we are pleased to publish a story by a Canadian author—*Top Secret*, by William S. Kals. Bill Kals was living in Vancouver when I bought this story from him, but at the time of writing he is on his way to Mexico—just one more move in a lifetime of world-travelling, paying his way with camera and pen; and sometimes working for a living! You see his creations in *Popular Science* and suchlike publications. He has a remarkable mind, and invented the world's first propane cigarette lighter, as well as capsulated beer!

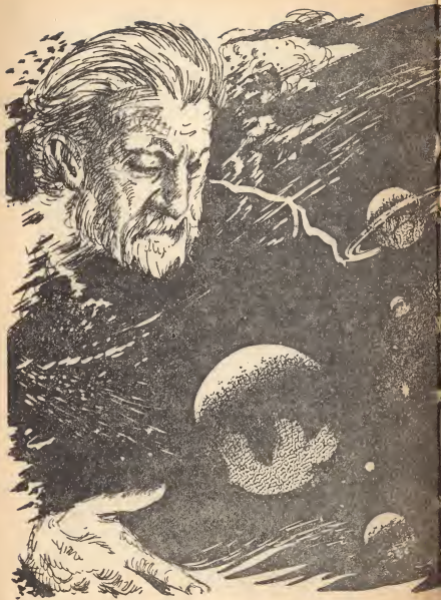
Leonard Pruyn and R. W. Hickey give us two *original* American stories. These have never before

been published, but no doubt they will now be appearing in American anthologies. That's what happened to *The Rose*, the lead novel which had never been published in the States, that we ran in our number 31. And several of Charles Eric Maine's stories were bought for American publication after appearing in *Auth-ntic*. We're beginning to be an author's show-window!

While on the fiction side of things, there's something I'd like you to do for me. Many times recently in discussions with groups of fans, I've found that they are enormously interested in the technique of science fiction writing; so interested that they frequently lay down the law about how it's done, without ever having written any themselves! Now this seems to me to be a topic that we could air in *Projectiles*. I'd like all interested readers (including authors and aspiring authors) to send me their views about how science fiction should be written, the kind of thing it should deal with and the various emphases they prefer.

Not only will this help us all to a better understanding of what it's all about, but it will help *me* to choose the stories you want. And that's what I'm paid for!

H.J.C.





HIDDEN SHEPHERDS

by BRYAN BERRY

Illustrated by DAVIS

If their mission were a success, they would be worse off than if they failed utterly!

In the old days—the days of the early colonists—Venus must have been quite a place. You can read all about it in the history books, of course. You can read how the Earthmen came out from Terra in their ships; first in the rockets as explorers, to Mars and Luna and cloud-draped

Venus; then, later, in the vast atomic drive colony ships, as settlers.

You can read about it in school and college and university; you can study the effects of Terrestrial colonisation on the Venusians themselves; and you can sigh and lay the book open on your lap—or lazily switch off the tri-di telefilm—and you can close your eyes and send your mind back and back through the generations to those dim frontier days.

Yes, you can see it. You can see how it must have been. You can use books and films and recordings and sensor capsules as the bricks and mortar with which to build up visions and images of those far days of the founding of the Solarian Empire. You can do all of these things—if you want to.

But, then, would you *want* to? Who would wish to trouble himself with thoughts on some brief phase in the history of a very minor planet that encircled, in its orbital course, a minor G-type sun known as Sol? Who would worry about such a world as Venus when there are innumerable other worlds and other systems known to

man and explored by him since the coming of the Dixon drive that had given him the furthest stars and the vastest deeps of space?

No, the frontier days are all over and 'forgotten, save by the few. Man's first attempts at colonisation of the worlds within his own System are small and dull compared with the immense adventures that were his after the discovery of the Dixon drive. The true glory of Terrestrial history starts, as we know, with the beginning of the Galactic Empire. Beside the pageantry and splendour of that great enterprise all else is as the morning mist that floats away in wreathes and bares the bright, fresh world so long and so well hidden in darkness.

But the worlds near to Earth are not deserted. There are still Earthmen on Mars; men who prefer the silence and calm of the red dust world to all the blaze of rockets and the glittering cities of the distant planets. Still they continue to live out their lives, as did their fathers, in quietude and hard, but simple, toil, rather than become embroiled in the great juggernauts of industrialisa-

tion, commercialism and empire-building.

And on Venus, too, life continues. Sunside—that great pleasure city that was built so long ago for the entertainment of the early colonists, is almost in ruins. So are many of the other towns that the Terrestrials constructed. But life goes on. Sometimes there are visitors from Terra: wealthy tourists who wish to be shown some of the ancient ruined cities of the prehistoric Venusians; government men on official business; tax-collectors and occasional military men, and, of course, the odd roving souls who have somehow managed to save up enough credits for their fare, or else have worked their passage on one of the mail ships or infrequent spaceliners.

Life goes on. The swamps of Venus steam as they did ten thousand years before, and the mists swirl and Sol sends down its warmth and light, as best it can, through the great cloud mummy-wrappings that enshroud the planet. And time tick-tocks onwards in its implacable fashion on Venus as on every other world. Yet it is hardly noticed, for life is slow and

lazy now on the planet that is Earth's evening star. Momentous events in the myriad systems of the Galactic Empire pass unnoticed, and momentous events on Venus itself are infrequent almost to the point of non-existence. And yet, thinking it over anew, there *are* momentous events. And these, paradoxically, are not really momentous at all, but very small—the birth of a child in a tiny community; the death of an aged and greatly loved Venusian chief; the harvesting of a fine year's *sharack* crop; the arrival of a stranger . . .

It was the magic time of dusk; and dusk on Venus is perhaps more magical than on any other world within the Solar System by reason of the eternally swirling mists that add a mystery even to the most prosaic of landscapes. And particularly so along the borders of the great inner sea that the Terrestrials called the Sea of Moriston, which is called the Water of the Fire Blooms by the Venusians because of the strangely luminous, semi-aquatic plants that grow along its banks. On the east coast of this stretch of water there is a fairly large

town—called Moriston or Karvora, as you will. Originally it was a sprawling collection of stone houses, labyrinthine alleyways, small quays jutting into the misty waters. Then, when the Earthmen came in their rockets, the town expanded, since it was near to many mineral seams. And it was chiefly mineral wealth that the Earthmen were seeking. But with the exhaustion of the seams and the exodus of the greater part of the Terrestrial colonists in later years, the town decayed and grew more like its ancient self. No longer did the streets echo and re-echo with the riotous drinking songs booming from the throats of hoarse-voiced Terran miners on their night off. Instead there came again the lilting, soulful melodies of the age-old Venusian ballads rising up like night-wind music drawn out of the mists and the swamps and the vast green heart of Venus herself.

Thus, on this certain evening, with the mist and the dusk light and the sounds of a reed flute and of a girl's voice raised in song, there was a mellowness and a great peace about the streets that ran down to the quayside at

the extreme north of Karvora. The mellowness spread its gentle evening fingers along the alleyways and into houses and taverns. It touched the fishing boats as they drew in at the quays and seemed to make their progress even smoother as they slipped through the still waters. And in a certain tavern this mellowness seemed to come to rest, almost, and make a home for itself as though tired of wandering the streets and needing for itself some focal point at which to nestle.

The tavern was very peaceful. It was too early in the evening for it to be busy, but there were some half-dozen customers seated here and there on the low, fur-cushioned benches, with their mugs of sweet wine in their hands and the dreaminess of dusk in their eyes. Two of them, an observant man would put down as fishermen immediately; Venusians both, with slender frames, pale skins and almond eyes. Two other Venusians—who might have been merchants—were playing a complicated gambling game with small bone discs at a table in the corner.

The other two customers were Earthmen. One might

have been a prospector, with a black bush beard and a pipe between his teeth. But the other man might well have baffled anyone who chanced to see him. An Earthman he was, certainly, but stranger in appearance than almost any other that one might see, even in the backwaters of such towns as Karvora. He was tall, thin almost to the point of emaciation and he was dressed in the rough leather tunic of a Venusian swamp-dweller. Round his neck was a silver chain on which dangled numerous charms and talismans, and across his shoulder was slung an ancient leather haversack that contained—one knew, somehow, without being told—all his possessions. But it was his eyes that would surely startle an observer more than anything else. They were set so deeply that they seemed composed of shadows only.

He sat alone, near to the bar counter, and his fingers strummed lightly, like pale twilight moths, on the strings of a small, crescent-shaped harp. The music, as one might guess, was as strange as the musician—weirdly haunting in tone, thrumming softly through the smoky room and

making itself a part of the evening mellowness.

When two men pushed open the door and stepped inside the tavern, heads turned in-curiously in their direction—but stayed turned since one of the newcomers was a stranger, though the other was well-known. The heads remained turned and the gazes became more curious because the appearance of a stranger in such a place—and a stranger dressed in the latest Terrestrial fashion into the bargain—was something of an event.

The first man was dressed in mud-spattered denims and an equally mud-spattered felt hat. He was known to the inhabitants of Karvora simply as Jack. His occupations varied as frequently as the winds. One week he would be prospecting for mineral seams that might, by chance, have been neglected by the earlier settlers; the next he might be trapping the dangerous *varyas* that lived in the swamplands to the south of Karvora. Sometimes, too, he acted as guide for visiting tourists. It was in this last capacity, the tavern drinkers judged, that he was employed on this particular evening. In one respect they were right. Jack

was acting as a guide—but Dr. Norman Howell, his companion, was not a visiting tourist.

Jack made a gesture with his hand that took in the whole room, muttered a greeting to the Venusians in their own tongue, nodded to the two Earthmen and then walked across to the bar, his companion behind him.

Howell nudged him. "Which one?" he asked in a low voice.

Jack nodded slightly towards the lean harpist and ordered two mugs of wine from the barman, who had shuffled gloomily out from the darkness behind the bar. Then he turned casually and said: "Evening, Rod. Want a drink?"

The nimble fingers struck a chord, slurred, stopped their motion. The dark shadow eyes turned. "Thanks, Jack," said the harpist. "The usual."

"Brought someone to see you," the guide announced. "Mind if we join you?"

Rod, the harpist, shrugged briefly and moved over on the fur couch to make room for the newcomers.

"This is Dr. Norman Howell," Jack announced, setting down the wine mugs, "from Terra. Dr. Howell,

this is Rod Darrity, ex-trapper, ex-musician, ex-guide and ex-umpteen other things, now retired."

Howell smiled and inclined his head. "Jack's told me quite a bit about you, Darrity," he said, softly. "I need some help on a certain project and it seems, from what I've heard, that you'd be the man to help me. Mind you, I've already learned that you're not generally interested in offers of work, but I thought I'd drop in here and see you anyway."

Darrity smiled and with the smile came the disclosure that, despite his unkempt appearance, he was really remarkably handsome. "It's a very long time since I did any work," he said. "What sort of a job had you in mind, Dr. Howell?"

Howell sipped at his wine appreciatively, letting the sweet taste of it settle on his tongue. "I heard you were pretty well-known as a guide some years back. Jack here told me that, and I've heard it from others besides. Seems there aren't many men who know Venus as well as you're supposed to know it, and that goes for the Venusians themselves as well as the Earthmen."

"I did a lot of roaming about when I was first here,"

Darrity admitted, slowly, looking from Howell to Jack and then back again, suspicion in his voice and in the darkness of his eyes. "And as for the Venusians—well, they're a stay-at-home lot on the whole, and most of them seldom travel further than the next town."

Jack nodded vigorously. "That's right, Doc," he put in, swiftly. "Rod here's the man for you if you want a guide that knows the country."

"What country?" Darrity demanded, suddenly. "What part of Venus are you interested in, Dr. Howell?" His voice had grown harsher, the words brittle and sharp, bringing with them a tension that had certainly not been there before.

"That," the doctor replied, evenly, "is what I'm hoping you're going to tell me."

"Tell you what area you're interested in? I don't follow."

Howell spread out his hands. "I'll explain. When Venus was first colonised by Terrestrials nobody really gave a damn about Venus itself because of the war threat on Earth. Colonisation was undertaken with the sole aim of getting radioactive material out of the planet and back to

Earth in the shortest possible time. When people got around to thinking of Venus as a world in itself and not just as a large-scale armoury, the Dixon drive had been developed and man was shooting for the stars."

He took another sip of wine and went on: "Of course I don't have to tell you all this; it's common enough knowledge. But I'm just laying the foundations, so to speak."

"Foundations of what?" The voice was just as harsh, just as suspicious.

"Of a tale I think you already know."

Darrity sat very still, very quiet, his mug of wine poised halfway to his mouth, his harp resting on the fur couch beside him. "Go on," he said, suddenly.

Howell fought down the sigh of relief that sought utterance and said: "Well, as I mentioned, nobody really cared too much about Venus as a world, or about the Venusians themselves or the history of the planet, because the only people who could get passages on the ships from Earth were either government men, military men or settlers. Their ambition was to make as much money as possible min-

ing the radioactive stuff and then return to good old Terra.

"Archæologists, historians and palæontologists didn't get much of a look-in, and it wasn't until later years that any attempt was made really to find out things about this planet. But in the end expeditions *were* sent out from Earth. The men that came here learned as much as they could, and quite a bit of material has subsequently been written about Venus and the Venusians. But the discovery of the Dixon drive and all that followed it made Venus seem pretty small meat. Consequently it was more or less left to wealthy cranks to discover whatever further things there were left about Venus—and, in fact, about the other planets near Earth. Cranks like Dr. Longdon Messenger, for instance." He stopped speaking abruptly and stared at Darrity.

"I told him you knew Messenger," Jack put in, leaning forward quickly. "Didn't seem no harm in just saying that. It's pretty common knowledge round these parts, anyway." His eyes seemed to plead with Darrity, seemed to be saying: "I know you don't like people talking about you

and what you've done, but this doctor character offered me plenty of money and I'm pretty well on the rocks right now."

Darrity stood up very slowly. Momentarily, as he rose, the light from the ceiling of the room shone straight into the caverns of his eyes and the piercing, lost brilliance of them, normally hidden in shadow, became apparent.

"I think you've got the wrong man, Dr. Howell," he said, in a voice that was no more than a whisper, no more than the sound a wind might make blowing through trees at evening. "I never knew anyone called Messenger. Jack here must have made a mistake." He picked up his harp and walked for the door.

"Darrity," Howell called, starting from the couch. "Darrity, come back here. *Please*. Even if you're not willing to be my guide you could at least tell me what happened on that expedition."

Darrity, the ex-trapper, the ex-guide who was now but a vagabond layabout harpist, had his hand on the door lintel.

Howell caught him by the arm. "I'll make it worth your while," he said, earnestly. "I don't believe that tale about

the party being set on by a *varya* pack and you being the only one to escape. And I don't believe that you didn't find what you were looking for, either. I think you *did* find the Old Ones."

The harpist opened the door.

"Darrity!"

The harpist shook off Howell's hand and stepped outside, Howell following him. "Darrity, can't you just *tell* me about it? I don't necessarily want you to guide me there yourself if only you'll tell me what happened to that other expedition."

Night had fallen and the cold mist had swirled in about the streets from the water of the Fire Blooms, and into this misty darkness, moving with sudden speed, unheeding the doctor's urgent words, sped Darrity, vanishing almost instantly as though the mist was a vast mouth, eager and waiting for food.

Jack touched Howell's arm. "Don't go looking for him," he said, quietly. "He knows his way about in pitch darkness. You'd never find him." He sighed. "Maybe we should have tried getting at him some other way," he said, finally. "But I told you that I didn't

think he'd help you. Whatever happened on that Messenger expedition shook him up so much it sort of turned his brain, and every time anyone so much as mentions it . . . Well, I told you he might do anything."

The two men stared out into the deep mist darkness and Howell sighed. "The one man who knows," he said speaking to himself and to the night. "The one man who *really* knows..."

The mist wrapped itself round him in a dark caress, but he walked within it with sure steps, through alleyways and narrow street tunnels, his harp clutched in his hand, down towards the quayside and the faint luminosity of the Fire Blooms.

Messenger.

The word was a key; a key that he had sought to hide from himself, yet which always came to light again, repeatedly, to unlock the gates of the bitter past and send him winging back through the years to the time of the Messenger expedition and all that had resulted because of it.

Mouse-footed in the gloom he reached the quayside and strolled to the edge of a small stone jetty with the mist

about him and the Fire Blooms hazily luminous in their veiled emerald splendour. Then, almost unconsciously, his fingers played gently on the strings of his crescent harp, and the lilting, ethereal melody hummed out into the night and his thoughts, uncontrollable now that the gate had been unlocked, flew back, back . . .

"Messenger's the name, Darrity," said Mr. Potter. "Dr. Longdon Messenger. He'll be arriving here tomorrow."

Darrity shifted his feet uneasily in the inch-deep pile of the office carpet. "Do you know why he wants to see me?" he asked.

The fat man behind the desk shook his head. "Not definitely, no. But it's bound to be a guide job of some kind. Apparently one of this chap's friends, now back on Terra, recommended you as being a man with a pretty deep knowledge of the country in this area of Venus. Presumably it was one of those big-game hunters you used to guide for."

Darrity nodded. "Who is this bird Messenger?"

"An anthropologist. Pretty

wealthy, too, from the sound of things. He landed from Terra two days ago with another professor called Buxton—an archæologist. Both of them have made a study of Venusian history and they've been here many times before over a period of years; put together some vast tome on the Venusian races that's become more or less the standard work on the subject, too, I understand."

"And you've no idea at all why they want me?"

"Only that it'll be a guide job. But they'll pay, mind. Pay high, too, I shouldn't wonder."

Darrity shrugged his shoulders. "O.K., then. What time are they due here tomorrow?"

"I told them there weren't any stratoplanes to get them here from the spaceport, but it seems they've got a flycar, so they should be able to make it by about 11.00 hours. Can you be here then?"

"Sure," Darrity replied.

The next day, when he returned to the Terrestrial Employment Centre, Darrity found that the two newcomers had already arrived. Potter introduced them all, ushered them into a private room and

then; his official task of introduction completed, retired to his own office with a satisfied smile on his face.

Messenger was tall and pale and young and he had lank, gingerish hair. Buxton was older, thick-set and balding and looked the more worldly of the pair. It was Messenger, however, who opened the conversation. "I expect you're wondering what we want with you, Darrity," he said.

"Potter told me he thought you wanted a guide, but that's all I know."

"Ah yes, well, that's true enough. We need a man who knows the swamplands and the mountains beyond the McDougall River."

"The Laykali river," Darrity murmured.

"Well, yes, if you prefer to use the Venusian name. I believe you acted as guide for Commander Patterson, some years ago, while he was hunting *varyas* in that region."

Darrity eased himself in the chair. "We never got as far as the Laykali," he replied. "But I've been that way with other parties. Did the Commander recommend me to you?"

Messenger nodded. "He

said you were the best guide he'd come across on Venus and that you'd be the ideal man for our own purposes as well. He also told us you knew quite a number of the native dialects and were well up in local history and mythology. Is that so?"

Darrity pursed his lips. "Well," he said, "I've spent all my life roaming about this planet, so I suppose I know quite a bit about the people." He stared curiously at the anthropologist. "Just what are you after, Dr. Messenger?" he asked, finally. "Those mountains on the far side of the Laykali are pretty well impassable—and they're only the baby brothers of those further on."

Messenger nodded. "I know all that," he admitted. "But then I'm not just planning an aimless exploration of the region. Far from it." He fumbled for cigarettes, handed them round, lit up and continued speaking, his words emerging smoothly in the wake of a blue smoke stream. "Tell me—you're an expert on local Venusian lore—have you ever heard tell of the Palu-Rua?"

"Palu-Rua? The Old Ones? Who hasn't heard of them?"

The ancient lords of Venus; the god-men who were reputed to have had eternal life and to have built great cities and temples in the olden times. They say that the ruins at Rualyki are the remains of one of their cities, don't they?"

Messenger nodded excitedly. "They do, indeed. Buxton and I explored Rualyki pretty thoroughly when we were here two years ago. Altogether, in our visits here, we've been over quite a bit of the planet's surface, I can assure you."

"So?"

"So, wherever we've been we've found accounts of the Palu-Rua. In every tribe and community there's always something in the local mythology to indicate that the Palu-Rua really existed and were not simply spirits. We've come across far too many parallels in the various tales to write them off as coincidence, and the amount of material we've collected is sufficient to make us think that there's a chance of actually *proving* the authenticity of the Palu-Rua legend."

Darrity nodded slowly, his cigarette bobbing between his lips. "I see," he mused. "And

you want me to guide you past the Laykali in search of more of these ruins, is that it?"

It was Buxton who answered this time. "Not quite, Darrity. We've already made pretty thorough examinations of most of the ruins that are ascribed to the Palu-Rua during our previous visits. Besides that, as Longdon's told you, we've made detailed studies of the mythology and legends of the present-day Venusians. Naturally there's the chance that we may have missed numerous important ruins, but while we'd both be quite willing to go on exploring ruins for the rest of our lives we feel that, just recently and quite by chance, we've stumbled on something more important than ruins—more important to our investigations into the Palu-Rua, that is."

"And what is that?" Darrity demanded, looking from one man to the other.

"Let me counter your question with one of my own," Messenger interrupted. "You've been on Venus all your life, you say, and you've mixed with all races, all tribes?"

"Well, that's roughly so."

"Then you've some idea of

the legendary powers of the ancient ones—the Palu-Rua?"

Darrity nodded.

"Name some of them."

The guide frowned. "Well," he said, slowly, "the chief thing seems to be that they were accredited with eternal life, or at least remarkable longevity. Then they're said to have been particularly strong and beautiful, physically, and gifted with telepathic communication."

"Go on; anything else?"

Darrity frowned once more.

"They were supposed to have had very powerful rituals and things in their ceremonies, too, I think, and their music was said to have had strange effects on those who heard it."

A sigh whispered briefly from Buxton's lips. "Ah, yes," he said, softly. "Their music. Have you heard that during their religious ceremonies the assembly was actually supposed to *see* the things the priests were chanting about?"

Darrity shook his head. "I've never heard it in as many words, no," he admitted. "But I suppose if they had telepathy as well as this powerful music it might have been possible for the priests to get the worshippers to see visions and so on; mixture of

telepathic suggestion and hypnosis." He frowned. "Why did you ask about these powers, anyway?"

Darrity's prospective employers looked at each other as though wondering which one of them should continue with the tale. Then Messenger said: "Because we wondered if you'd ever heard of anyone on Venus, anyone alive today, that is, with the same sort of powers."

"The power to influence others through music, you mean?" Darrity demanded, surprised.

Messenger nodded.

Buxton took his cigarette from his mouth and leaned forward. There was a tension in the room, a tautness that webbed the three men together and held them. The soft ticking of the electric clock on the wall made the only sound. Then Darrity said: "Not that I can think of."

"Ever been to Port Latimer?" Messenger asked, quickly.

"Been through it on various trips, but I've never stayed there any length of time," the guide replied.

"Then you haven't heard

of the Place of Harps and Visions?"

Darrity shook his head. "Fraid not. What is it?"

"Some kind of a tavern, I understand. After you'd brought Commander Patterson back from his *varya* hunting expedition he spent a week at Port Latimer, visiting some friends of his. He told me about this Place of Harps and Visions when I met him, months afterwards, back on Terra."

"Goon," Darrity prompted. "What makes this place so special?"

"Well, it's the usual type of drinking hell, apparently, with wine and *chakka* spirit flowing pretty freely, plus the usual drug taking and so on. But there's one thing about it that makes it very different—according to Patterson. There's a girl who plays the harp and sings for the customers. She's not an employee; just someone who often strolls in and entertains whoever happens to be there. She was there when the Commander looked in and he told me about her. Apparently she's more than wonderful to look at and her music is very much more than wonderful. When she sings about a palace of

emerald light, or whatever it happens to be, you actually see the palace. Patterson vouches for this, remember, and as you yourself will know, he's ab ut the most down-to-earth type you could possibly hope to meet."

Darrity's eyes grew wide as he listened. "Then you actually think . . ." he started.

"That the girl is descended from the Palu-Rua? Not yet we don't," Messenger replied, swiftly. "We're scientists and we don't believe things we're told until we've found out about them for ourselves. But isn't it a coincidence that, while the girl is young and beautiful and seems able to exercise some strange power over the people who listen to her, and while she isn't actually employed at this tavern, the tavern itself is known by the name of the Place of Harps and of Visions?"

"Couldn't it have been called something else before?" Darrity asked. "Couldn't they have changed the name when the girl started going there, in order to try and rope in more customers?"

Messenger shook his head. "Patterson asked about that while he was there. The place

has always been known by that name, but the Venusians at Port Latimer wouldn't tell him any more than that. They closed up like the proverbial clams, and even when the Commander tried flashing fifty credit notes under their eyes they remained silent."

"And he handed the mystery on to you to clear up, is that it?"

"Roughly speaking that's so," Messenger admitted. "And because of its possible bearing on the Palu-Rua problem, it's a mystery that's right up my street."

"But what do you want me for? You don't need a guide to get to Port Latimer."

"I know that, but I'm certain that Port Latimer will only be the first step. Patterson told me that one of the Earthmen there said that he'd heard tales of this girl singer's origin. Apparently she's supposed to have come out of the mountains beyond the Laykali River, from a place called Keplura."

"Never heard the name."

"Neither had I. But the word 'Keplura' could easily be a corruption of Ker-Palu-Rua, which means Stronghold of the Ancient Ones. Our intention is to try and get

sufficient information at Port Latimer to warrant an expedition into the mountains. I tackled you before going to Port Latimer, because I wanted you to be in at the start of the whole venture. If Port Latimer yields nothing you'll be paid off there at the same rate as if you'd been guiding us through swamp country. If it *does* yield something, we'll guarantee a minimum of a thousand credits to be paid to you when—and if—we return. If we find what we're after, there'll probably be more credits coming to you. Are you on?"

Darrity threw his cigarette stub into the shaft of the wall incinerator. His eyes were bright, reflecting something of the excitement that was so apparent in the tenseness of the two scientists. "I'm on," he said.

PORT LATIMER is little different from any of the myriad other communities that resulted from the development of Venusian villages by the early Terran settlers. It is a collection of mud and wooden huts with the usual sprinkling of Terrestrial buildings. Once it served a useful purpose, in that it was the point at which

ores mined in the foothills beyond it were shipped across the Water of Fire Blooms to Port Fellowship, some two thousand miles away.

Since those early days it has deteriorated. Some government men still work there and the place has its normal quota of Terrestrial drifters, but it has few visitors for the very good reason that it is on the fringe of the swamplands, and the swamplands of Venus are even more unhealthy than any of its other numerous unhealthy areas.

Messenger, Buxton and Darrity arrived there by flycar, to which, at Darrity's suggestion, floats had been fitted to enable them to alight on land or water as they chose.

They descended gradually, carefully, expertly, Buxton at the controls, out of the misty sky, to settle like a vast insect on the placid surface of the Water of Fire Blooms some hundred metres from the quayside. It was mid afternoon and there was a damp warmth to the air, an oppression that was almost tangible, hanging over trees, over buildings, over water, hanging heavily like some huge grey shroud upon all of Port Latimer.

Messenger had visored the postmaster to explain when and how they would be arriving, and now, within seconds of their landing, a row-boat was putting out from the quayside.

Buxton, a pipe between his teeth, peered out of the glassite cupola that topped the flycar. "A man with a beard and white ducks," he said slowly.

"That's Shaw, the postmaster," Messenger nodded. "Patterson told me about him."

"Is that the man who told him about the girl coming from Keplura?" asked Darrity.

"No, but he'll introduce us to him. I explained on the visor what we were after, and Shaw told me he'd take us to see this other man."

Darrity nodded and stepped up onto the metal ledge next to Buxton so that he could watch the row-boat's approach. Port Latimer was no more than a slight darkness in the mist, a band of dimness cutting the misted sky from the equally misted water. And, peering out into this pale opacity, Darrity wondered briefly what was in store for him; wondered whether Port Latimer would yield nothing and thus bring

the adventure to an end, or whether it would, as Messenger and Buxton hoped, merely be the first stage in a journey towards some legendary goal.

And then, quite suddenly, gazing out and watching the slow approach of the boat, Darrity felt some strange premonition, a feeling that he already knew that there was something ahead of him, and ahead of Messenger and Buxton also, something great and yet ominous—ominous perhaps because of its greatness.

There's still time, said a small voice within his mind. *There's still time to tell them you've changed your mind. They could easily get another guide. You could recommend someone to them. There's still time for you to turn back.*

He turned to look at Buxton. And he saw something in the man's face that seemed to mirror his own feelings, his own fears. Then, as the row-boat drew alongside the flycar, the feeling passed, might never have been.

The voice of the postmaster rose up, hailing them, out of the mist.

And then it was too late, somehow, to think of turning back.

By nightfall they had not only met Wilson, the man who knew of the strange origin of the girl singer, but they had also reached the Place of Harps and of Visions itself.

In appearance it was much the same as any other tavern; a long, single-storied building, built partly of stone, partly of wood and partly of mud. Flat-roofed, narrow-windowed, it had a courtyard in front of it that contained some wooden tables and benches for those drinkers who preferred the sky for their ceiling and in which, Wilson explained, the singer entertained.

They arrived there in that early part of the evening, when the winds still move softly, coming in from the water and bringing the last coolness before the torrid dampness of the still night.

"Nothing happening so far," Wilson said as he ushered them into the courtyard. "She won't be here for a good half-hour yet, if she comes at all."

"You think she will?"

"She should," Wilson nodded. "It's pay-night for the odd swampers still left in this god-forsaken hell, and she normally turns up on

nights when there's money about."

They chose a table in the far corner of the yard and ordered drinks from the slovenly, *chakka*-sodden waiter. Then Messenger turned to Wilson and said: "Just what do the local inhabitants think of this girl?"

Wilson shrugged broad shoulders. "Difficult to say. They're pretty cagey about her on the whole. The only information I ever got was from a man who was dead drunk. If he'd had slightly less *chakka* inside him when he spoke to me, he'd never have told me anything."

"Hetoldyouabout Keplura, then?"

"Yes. Said this girl came from there. When I asked him where the place was, he just told me that it was far beyond the Laykali and that nobody ever went there to see what it was like because the only people who ever *had* gone there hadn't come back."

"Sounds cheerful," muttered Buxton, fumbling with his pipe. "Did this drunk get as far as telling you what prevented people getting back?"

Wilson nodded. "He said the Old Ones liked their

privacy. I tried to pump him for more information on these Old Ones, but he seemed to realise that he'd already said more than he should've done and he wouldn't talk."

"This sounds almost too good to be true," Messenger put in, excitedly. "It sounds almost as though some of the Palu-Rua are still living."

"Impossible," snapped Buxton. "If they ever existed as a separate race and not just as a branch of the ordinary Venusians, then they've been dead for numberless centuries."

"But this girl . . ."

"May possibly be a descendant of the Old Ones, but certainly not a member of any community that still exists," Buxton finished for him. "We've been all through this often enough in the past, Longdon, and I tell you it's absolutely impossible for . . ."

He broke off abruptly and sat, pipe in hand, staring across the courtyard, his eyes wide, reflecting the red glare of the torches that glowed in the darkness and formed the only illumination.

"She's early," murmured Wilson, speaking very softly.

Messenger and Darrity turned on their seats, not

speaking. The only sound, then, was the tinkling of her metal anklets as she crossed the courtyard towards the tavern.

She was beautiful. And her beauty was not that of an ordinary Venusian tavern singer—that much was apparent, merely from a single glance at her. She was slightly above average height, lithe and sinuous, and she had skin the colour of dark gold. Her eyes flashed darkly and her mane of black hair bobbed gently on her shoulders as she walked. She wore a simple skirt of white linen and a long shawl, or *crylla*, of native lace sewn with the glittering scales of some swamp reptile.

"See," whispered Messenger, urgently, excitement in his voice. "See—her skin is dark, Frank, *dark*. Not like the normal Venusian at all."

"Could be there's Terrestrial blood in her veins," murmured the archaeologist, determined not to commit himself. He turned to Wilson. "Will she sing for us?"

Wilson waited until the girl had gone into the tavern itself before replying. Then he said: "I doubt if she'll sing before the place gets a bit more

crowded but I can ask her if you like."

Darrity leaned across the table and touched Messenger's arm. "Wouldn't it be better to wait a while, doctor?" he asked, easily. "We don't want to get her suspicious if we're going to try and question her later."

"Suspicious?"

"Well, presumably she'll be as cagey about her origin as this Venusian Wilson talked to."

Messenger thought this over for a minute, then nodded. "You may be right," he admitted. "We'll wait until more people turn up, then it'll seem more natural when we try to talk to her after she's through singing." He stared across at the tavern door, eagerly, expectantly, waiting . . .

Two hours later the courtyard had filled up and the sweet wine had flowed and the air was hot and thick with tobacco smoke and *chakka* fumes. The flares that had died out had been replaced by others, and their red glow made a ruby haze of the atmosphere. And Shuurya, the strange and beautiful singer with the skin like dark gold, stepped out of the tavern

building with a small and crescent shaped harp in her hands.

There was none of the cheering or clapping or mugging that one might have expected from the assembled swamp-walkers, traders and peasants. There was, instead, a deep silence, a quietude that came down out of the night like a vast hand and spread out its fingers over the courtyard, bidding all be silent.

Her fingers flickered on the harp strings, striking chords that were plaintive and yet wild.

Darrity held his breath, watching her as she stood beneath one of the red torch flares. And he felt again that strange fear that had come to him first when he had gazed out of the flycar cupola that afternoon and seen the misty band that was the quayside of Port Latimer. The fear that some great and terrible thing was in store for them, all of them, and that he should turn and run. But it was too late to run. Too late by far, now, for Shuurya was there in front of him, her gold fingers plucking dark magic from her harp and her eyes fire-bright and wild.

And then she started to sing.

It was a song of longing. It didn't matter who was longing, and it didn't matter what they were longing for. It didn't matter because the song was only the key that turned the lock of every listener's inner desires and gave his own private dream-castles a real existence.

The song and the sweet harp music rose and fell in the hot night and it was a million songs to a million people with a million different desires and longings.

And for Darrity it was the song of his own longing for all the things that, through the mode of life he had chosen, he had denied himself: a steady job, a wife, children, and, above all, a home that was really a home, in which he could feel at peace. And it was not just that the song conjured these things into his mind, but it conjured them to visible appearance and they were there, tangibly, before his eyes so that he felt that if he reached out he could touch the walls of his dream house, feel the damp loam of the small garden that lay behind it . . .

Silence followed the song. Silence deeper even than that which had preceded it. Silence

and the end of the dreams, the end of the visions, the end of the magic.

"She's gone," Messenger said, the first to break the stillness, the aftermath of silence.

Darrity started, blinked, stared about him. It was true. The girl was no longer in sight. Nor were his dreams.

"She knew English," said Buxton, softly, licking his lips and staring, unseeing, at the space below the torch flare where Shuurya had stood.

"English?" said Wilson. "She was singing in the local dialect."

"Nonsense," put in Messenger, rounding on him. "She was singing in English. And *what* a song!"

For Wilson it was Venusian, thought Darrity, and for Buxton and Messenger it was English—and for me, too. But does it matter what language we thought we heard? No, it wasn't a question of language, but of something far deeper.

"We each heard what we wanted to hear," he said, certainty in his voice. "To some of us it was local Venusian, to others it was English. But that can wait a while, anyway. The main

thing is to find out what happened to the girl." He looked at Wilson. "Do you know the proprietor of this place?"

Wilson nodded.

"Then go and see him," Messenger urged. "Tell him there's a fifty credit note waiting for him if he gets that girl to spare us a little of her time. Tell him we're studying Venusian music or something and that we'd like to talk to her about her singing."

Wilson got to his feet with a dubious look on his face. "Well, it *might* work, I suppose," he said. "I doubt it, but I'll see what I can do." With that he walked over to the tavern building and disappeared within.

"The words were Venusian to him," Messenger breathed, "yet to us they were English. You know what that means?"

Buxton nodded. "Telepathy. She sang to our minds and not to our ears at all. Telepathy not being a trait of ordinary Venusians, it looks as though we may really be onto something."

"*May be!*" exploded Messenger. "It seems pretty obvious that we *are* onto something."

"Don't count your chic-

kens," answered Buxton, the realist, "until they're hatched."

Luck, it seemed, was with them, for Wilson returned some five minutes later to tell them that the proprietor was interested in their proposal and would like to see them. They went into the tavern, led by Wilson, to a back room where the innkeeper lived.

He was a slight, pale-skinned Venusian, somewhere in his forties and with a swift, bird-like glance that flickered over each of them as they entered. He gestured them into chairs and pushed a jug of *chakka* across to them. "You want to meet Shuurya?" he asked in the local dialect.

Darrity glanced at Messenger and then replied for him, speaking in the same tongue. "We do. My employers, here, are very anxious to speak with her."

"She is not here now. She will be back later. Wilson tells me that you are interested in Venusian music. Is that so?"

Darrity nodded. "We are especially interested in the sort of songs Shuurya sings. We would like to know more about her and where she learned such songs."

The innkeeper chuckled.

"So would many people, my friend. But Shuurya, she does not like to speak about herself. And since she brings us good trade here, at the Place of Harps and of Visions, we do not ask her questions. I cannot prevent your speaking to her, but I tell you now that you will be wasting your time. You will learn nothing from her because she will not wish to tell you anything."

He shrugged his shoulders. "As for me—I accept her as a gift from the Gods; she brings me trade and asks nothing in return except occasional gifts of clothing and a place in which to sleep when she has nowhere else to go. Who am I to question where she came from?"

Darrity frowned. He had made no mention of wanting to know where the girl came from, so far as he could recall. "Do many people ask you about her?" he asked.

"Of course. But only strangers. We of Bruula have come to accept her. Even those of your own people who live here have learned that no good comes of questioning her."

"How long has she been here, singing for you?"

Again came the smile, the

chuckle. "You will not believe me when I tell you," the innkeeper said, slowly.

"How long?"

"Since the time of my grandfather."

Darrity started. "But that isn't possible. She is a young girl still!"

"I told you you would not believe me. This tavern was built by my grandfather when he was a young man. It was called the Place of Harps and of Visions then, as it is now." He poured himself a drink from the *chakka* jug and motioned his visitors to do the same. Darrity, while this was in progress, gave Buxton and Messenger a brief resumé of the conversation, since their knowledge of the local dialect was far from perfect. Then he turned to the innkeeper once more. "You are actually asking me to believe that this girl was singing here in the time of your grandfather?"

Smilingly the innkeeper nodded. "That is so," he said. "We do not ask too many questions, here in Bruula. We accept the fact that something incredible has happened and we do not try to pursue the matter any further. Only ill comes to those who question such things." He

l lounged further back on his couch and went on: "As for her music and her singing, well, the same applies to those also. We do not know *how* her songs are so different from those of other singers, but we know that they *are* different and that is enough for us. Perhaps it is as the old men say and it is the music of the Ancient Ones. Perhaps, too, there is truth in the tale that the Ancient Ones still live in their splendour beyond the mountains. I do not know. I do not care, either. I have my tavern to look after, and that is enough to occupy my mind."

Messenger, who had caught the words "Palu-Rua," tugged at Darrity's sleeve. "What was he saying about the Ancient Ones?"

Darrity explained what the man had said, finishing up by saying: "He's just giving us a gentle warning that it's better not to try to understand the apparently impossible. The usual sort of thing. What do we do now? Wait and see the girl?"

Messenger nodded. "Of course."

Darrity turned once more to the innkeeper. "How long

will it be before Shuurya returns?"

"Perhaps an hour. Perhaps longer. But I tell you now, Earthman, that you will learn nothing from her. Better for you to forget this matter. Better for all of you."

"We prefer to wait and speak with the girl."

The man sighed, deeply. "Very well, then. You may wait here, if you wish, but I must attend to my customers." He got to his feet and then coughed slightly. "There was mention of a sum of money, I believe . . ."

Messenger handed him the promised fifty credit note and then, with a courteous bow, he walked from the room.

"Well, Frank," said Messenger, turning to his fellow explorer, not without truculence. "How can you explain Shuurya's having been here in the days of the old boy's grandfather?"

Buxton stared fixedly at the table. "I can't explain it," he said, slowly. "I can't think of any explanation at all, unless the whole thing is a tale made up by the innkeeper to bring in more customers. But let's wait and hear what the girl has to say before we start arguing."

"From what we've just heard," Darrity put in, "I doubt if we'll get much out of her. If she's got anything to hide she won't be overjoyed when she gets back here and finds four Earthmen waiting to cross-question her."

"You think one of us should see her alone, then?" Messenger demanded.

Darrity nodded. "Yes," he said. And then he thought, wonderingly: *Why did I say that? Was it because I really believed it, or because—because I wanted to see her alone?*

"Yes," he repeated. "I think it would be far better if she just met one of us. And not here, either."

"What do you mean?"

"Just what I said. For another fifty credits the innkeeper would probably tell us where she went. I could go out and try to meet her—tell her I heard her sing and liked her voice—spin her a line of some kind and try to get some information out of her in a more friendly way. That seems to me to be a better idea than letting her see the four of us grouped round a table waiting for her."

"But supposing you miss her?"

Darrity nodded towards Wilson. "He knows the local lingo; he could interpret for you if she gets back here and I'm still out."

But I shan't miss her, he thought, amazed at the certainty within himself, the certainty that he would not only meet her, but that she would talk to him and tell him more about herself than she would ever tell the others.

He rose to his feet and stared down at the trio. "What about it?" he asked, studying their faces.

Messenger shrugged and pulled another fifty credit note from his wallet. "It's a chance," he said. "And if you do meet her on your own I suppose you're more likely to get her to talk, as you say, than if we were all there." He handed the note across. "Go and see what the innkeeper says," he finished. "We'll wait here."

"And if you *don't* miss her," Buxton put in with a grin, "remember that she's reputedly old enough to be your grandmother despite her looks, so keep the relationship purely platonic."

Darrity didn't smile but, walking rather stiffly, moved towards the door.

The innkeeper accepted the fifty credit note with grave thanks. Yes, he thought he knew where Darrity might find Shuurya. No, he was not *certain* where she had gone, but he thought it possible that she was walking along the quayside, watching the Fire Blooms. He had heard that she sometimes did this, but, of course, he could not swear that she was doing so at that very moment. Yes, he could suggest a place where Darrity might meet her on her way back to the tavern. No, the place was not hard to find; just down such-and-such a street to the quayside, then along to an old thatched shelter. If she had been strolling beside the water she would be bound to pass that way.

Darrity set out into the mist, his feet guided along the hot dark streets by some strange, compelling force. He felt that, even if he had not asked the innkeeper for directions, he would eventually have found Shuurya. And it was not merely optimism that made him think thus; no, it was something deeper, something stronger—an intuitive certainty that had forced itself into his mind and which

had remained there like some parasitic growth—mistletoe upon an oak—despite his efforts to shake it off.

The air had a sulphurous tang to it and a heat that was fetid, a swamp heat, damp and somehow obscene. His rubber swamper's boots made scarcely any sound at all on the stone flagstones that formed the pavements of Port Latimer's streets.

He reached the quayside within a matter of minutes and then turned west, walking swiftly along by the water's edge with the Fire Blooms making their hazy emerald magic on one side and the dark, mist-shielded shapes of the outlying settlement buildings on the other.

And there was nothing in his mind, as he walked, save the thought of Shuurya and the image of Shuurya singing in the torchlight at the Place of Harps and of Visions. There was no thought of Messenger or Buxton, or even of the real nature of his mission. There was only Shuurya.

He reached the thatched shelter almost before realising it, and somehow he was not surprised to see that Shuurya was already there, half-hidden

by darkness, scarcely more than a pale vision lurking in the gloom.

He walked towards her. "Shuurya," he said, and then he stopped, a yard or so away from her.

She stood very still.

The night was dark and silent and humid with the swamp heat.

He moved towards her, his mind held, still, by the image of her as he had seen her, but half an hour before, bathed in the red glow of torchlight, a crescent harp in her hands.

Her words came to him out of the gloom. "Earthman, you must go back. You must leave these others and forget about your mission."

The fact that she already knew something about him did not really surprise him. Nothing, he felt, strangely, could ever surprise him about her. Somehow, telepathically, she had called him and he had sought her out. Why she had called him he had yet to learn. "You made me come to you, here, tonight," he said, slowly.

In the hot darkness of the shelter gloom she nodded. "I called to your mind and you could not help but find me."

"Why did you do it?"

"Because of what you are—

and of what you would like to be. When I was singing I watched the visions form in your mind—the visions of your longings, your desires. They were very different to those of the others in that place—and similar, in a way, to my own. That is why I wanted to warn you.”

“Warn me?”

She nodded again. “I could tell, from the minds of those who were with you, what you are seeking. And because my mind was drawn to yours, while I was singing, I wanted to tell you that nothing but ill could come of your going with these men.”

“I have agreed to help them,” Darrity told her.

“You can still withdraw. You can still escape.”

“It isn’t a question of escaping; I’ve given them my word.”

“You can break it.”

He stared at her. “Why are you so interested in me? Why, if you know so much about what we are planning to do, have you not tried to warn the others?”

She looked down. “I told you,” she replied softly, “that I saw the things my song inspired in you, the longings. It was because they were similar

to my own that I took notice of you.”

“Who are you, Shuurya?” he demanded, suddenly, taking a further step towards her.

“I am Shuurya, that is all. Do not question me, Earthman. Just take my advice and leave these scientists. Go back to your home and forget that you ever met them.”

“You may be able to read minds, Shuurya, but no one can read what is in the future. You cannot know that our mission will be a failure, so why do you warn me?”

“If your mission is successful you will be worse off than if you failed utterly. What you are seeking is something that the men of this world leave alone. They are wise to do so. You Earthmen would be wise to follow their example.”

“Success worse than failure?”

“That is what I said. I cannot tell you more—I *may* not. But heed me, Earthman, and turn back. Already I have said too much.”

He shook his head. “You have not said enough,” he told her. “You have warned me, but your warning is vague. You say that if our mission succeeds we will be worse off than if we had

failed; how can such a thing be so? My friends are seeking knowledge, seeking truth, and there is nothing evil in that. Knowledge and truth are sufficient unto themselves, Shuurya, it is the way in which men use such things that make them good or evil."

A sigh rippled in the darkness. "In many ways you are right, Earthman," she agreed. "But this knowledge that your friends are seeking is something that, if they discovered it, would affect them very strangely, very terribly. It would affect all your people, too, if your friends spread news of it."

She moved nearer to him and placed a slim gold hand upon his arm. "Please," she whispered, "tell me now that you will leave Port Latimer and that you will not act as guide for these men."

"They will get another guide," he said.

"I do not care about other guides," she retorted, angrily. "I care about you."

She's warning me because she knows that something's going to happen to the expedition, he thought. *She's just trying to make certain that nothing happens to me.* It occurred to him, then, that

his mind was functioning normally once again and that whatever telepathic control she had been using on him was now no more. And that seemed to indicate that she wanted him to agree to give up the mission of his own free will. If he refused to agree she might be able to force him to do so against his will, but if he *did* agree he would at least stand a better chance of finding out more about her and her reasons for warning him off the search.

"You really care about what happens to me, then?" he asked her, his voice low and gentle.

"Yes, Earthman, I care."

If I play this right, he thought, quickly, I can probably get more information out of her than by any other method.

"I never heed warnings," he told her, "unless I understand them, and I don't understand yours. Also, I never heed warnings unless I know that I am going to gain something doing so. What do I gain by giving up this mission?"

"You keep your life," she told him, slowly. "And, more than that, you go on living in the same way. You may not think it a very good way, perhaps, but it is many times

better than the life you would lead if you and your friends found what you are seeking. If your search was successful I tremble to think what the effect would be on your minds and on the minds of those to whom you passed on your knowledge." She stopped speaking suddenly. He saw her body jerk in the gloom, suddenly, spasmodically.

There was a sudden, strange deepening of the hot night silence.

Darrity felt his heart pounding within him like some vast clock's ticking echoing and re-echoing in cathedral spaces. "What is it?" he demanded. "Why did you stop speaking?"

"Danger," she breathed. "Even now there is danger for you, Earthman, and for me also if I tell you more." Her hands gripped his thin linen swamp-jacket. "Go now. Don't rejoin your friends. Go now!"

The urgency of her tone communicated itself to him with savage force. He felt a sudden chill; a feeling of threatening peril that was hanging, it seemed, like some huge nightmare bird in the ebon darkness above him, hovering there, waiting to pounce.

The feeling was still with him when, a fraction of a second later, Shuurya darted past him from the gloom of the shelter and ran off into the mist.

Instantly he turned "Shuurya!"

The mist swallowed his voice.

He ran from the shelter in the direction he thought she had taken, calling her name, his feet slushing in the mud of the winding path that led away from the stone quayside. The feeling of peril had gone now, its place taken by the need to find the girl who was the sole tangible clue to the entire mystery.

He ran for a long time, or so it seemed to him, and without success. It was as though the mist was in league with the girl and had lifted her up in its downy arms and spirited her to some far place with magical speed.

"Shuurya!" he called. Again and again: "Shuurya!"

It was while he was calling her name that he saw the two men. They stepped silently out from behind some bushes, pale blurs in the gloom but with a stealthiness and a purpose in their movements.

When he realised what their

purpose was he had just enough time to lash out, feel his fist connect with a chin like a stone wall, grapple briefly and, while doing so, think: *They were waiting for me! They knew I was going to be here, or that I was going to pass this way!* Then something hit him on the nape of the neck and he dived down the endless throat of a vast mouth of midnight darkness. Down and down and down . . .

DAWN, he thought, after the long darkness, after the dazed recollections of what had happened. *They hit me and I've been lying here all night and now it's dawn.*

When he opened his eyes he saw that the light was not that of the dawn at all. When his eyes had been closed he had felt, rather than known, that there was a light above him. But now he saw that it was no morning sunlight that shone upon him but, instead, the glow of an oil lantern.

A voice spoke to him in the local language. "Are you hurt badly, Earthman?"

"Hurt?" He repeated the word, finding difficulty in speaking, difficulty in thinking, even. There was a great pain within his mind, a pressure, an

aching that did not pulse or pound but was a constant agony. "Yes," he croaked out. Then: "No, not badly. Someone hit me. My head." He forced himself to sit up and take notice of the man who had found him. He was an elderly man with the pallid skin and flaxen hair of the swamp people. On his shoulders was a sack that glistened damply in the torchlight, and from this Darrity judged him to be a fisherman who had probably been torch fishing off the quayside and had happened to stumble upon him on his way home.

"There is nothing I can do for you?" enquired the old man.

Darrity got to his feet with difficulty. "Yes," he muttered. "Yes, you can tell me which direction to take for Port Latimer, if you will."

The man jerked a finger. "That way until you reach the water, then turn to your left and follow the quayside." He peered curiously at the Earthman. "Were you robbed?" he asked.

Darrity shook his head. "I had no money on me," he replied. "And somehow I don't think they were interested in robbery."

"They? There were many of them?"

"Two. Both of them tall and both of them strong. Have you been out all night? Did you see anyone?"

Silence.

"Well?"

The old man shook his head slowly. "I saw nothing," he said.

Darrity stepped closer to him. "You *did* see something," he said, peering intently at the man's face. "Your face tells a different story to your words. You saw something and, whatever it was, you were frightened by it. You are *still* frightened."

The man blinked rapidly, looked away. "I saw nothing and I know nothing."

Darrity set his jaw firmly and brought a hardness into his voice. "Listen," he said. "I've been knocked down by two men who attacked me for no apparent reason. If you know anything about them you'd better tell me." He doubled his fists angrily.

The old man shuddered and stepped back. "I want no trouble," he whined. "And it is true, what I have told you. I did not see these men who attacked you, for I did not see them when they were

fighting with you, so how can I tell that they were the ones?"

"But you did see some men; some men who were strange to you and who frightened you in some way?"

A pause; then: "Yes. Yes, I saw two men."

"What were they like?"

"I—I was not near enough to see them clearly. I was spear fishing on the rocks and I saw them walking along the beach. But for the glow of the Fire Blooms and for the fact that I happened to be looking in that direction I should not have noticed them."

"But what was it about them that frightened you?" Darrity insisted.

The man shuddered. "The way they walked, their appearance; everything about them. They were not men of Port Latimer, that much I am certain. Nor were they from any nearby district. They were as tall as Earthmen, but somehow different from them." He shook his head. "I would not even like to guess at where they came from, but I know that when I saw them my heart grew cold within me and I felt a great fear."

"Just because you saw two

strangers? Are you a woman that such sights should frighten you?"

The fisherman shifted from one foot to the other and would not meet Darrity's gaze when he answered. "No, Earthman, I am no woman. But there are things that you feel inside you and yet cannot explain. I do not know what it was about these men that frightened me, but frightened I was. I had the thought in my mind, as I watched them, that they were not men at all—not as you and I know men."

Darrity risked a long shot. "Would you say that about Shuurya, the singer at the Place of Harps and of Visions?"

The man stared at him piercingly, then nodded slowly. "So you, too, know of her?" he said.

Darrity thought of his last sight of her as she had disappeared into the mist. "Yes," he said. "I know of her. But you have not answered my question."

"Yes," said the fisherman. "I would say that about her also, though I have seen her but a few times. Some say that she is not a woman, but a goddess from some hidden

land where time has stood still and where the Old Ones still exist. And these men that I saw—they also had the look of beings more than human." He took a step away from Darrity and motioned with his torch. "I must be on my way home now, Earthman. It is not a good night to be abroad." With that he turned and, without further words, his sack on his shoulder and the torch redly glimmering in his hand, made off into the trees.

It was only when he was alone again that Darrity realised that, all through the conversation, he had been gripping something tightly in his hand, something that he had been holding when he regained consciousness, something that he had wrenched from the neck of one of his attackers. He drew out his pocket torch and snapped it on, peering intently at his find.

It was a small medallion made of a metal that might have been copper. On one side was a strange design that seemed to follow no regular pattern, while the reverse of the disc was covered with hieroglyphics. After a minute's further inspection he

shrugged, dropped the medalion into his pocket and then shone the torch onto the ground in the hope of finding other evidence of the struggle. There was nothing worth noticing. Merely footprints in the mud and marks where the grass had been pressed down by the weight of his own body where he had fallen.

He frowned, thinking back to the fight itself. What could they have been after? Logically, the answer was—nothing. They hadn't robbed him and, so far as he knew, they hadn't even known him, so revenge could hardly have been the motive. The only thing that remained was the same thing which he already knew, deep down, to have been the *raison d'être* of the attack: the mission on which he was engaged and his meeting and conversation with Shuurya.

But had they intended merely to knock him out, or had they meant to kill him and put him out of action for good and all?

He shook his head wonderingly, the pain still with him, a vast shell of agony pressing in upon his skull. If they *had* meant to kill him they hadn't fallen far short of their target,

he thought ruefully as he touched the back of his head with tentative fingers.

Then, with a sigh, he started off once more, walking slightly unsteadily among the trees in the direction the old fisherman had given him, heading once more for Port Latimer and—he found himself thinking—perhaps for Shuurya, also.

The Place of Harps and of Visions was not closed, Darity was surprised to find, despite the fact that some five hours or more had passed since he had left there. However, the courtyard was empty and the lights within the tavern building itself were far dimmer than they had been.

He pushed the door open and peered inside, searching for some sign of Messenger and his companions, but without success. The only customers, now, seemed to be Venusian swamper in the last stages of sodden drunkenness.

He strode across to the door of the innkeeper's rooms but was hailed before reaching it by a surly-looking waiter. "You wish to see someone?"

"I'm looking for some friends of mine—three Earth-

men who were here with me earlier."

"They are not here now," the man said, indicating the almost deserted room with a wave of his hand, "as you can see."

"Then I'd like to see the owner."

"He is sleeping."

"Then wake him—this is important."

Perhaps it was Darrity's tone that convinced the man, or perhaps it was his mud-stained and dishevelled appearance, but whatever it was the waiter made no further trouble.

Minutes later, tousle-haired and sleepy, the proprietor emerged from what was presumably his bedroom. "Well?" he grumbled, blinking in the light. "Who is it? Oh, *you*, Earthman." He smiled slightly. "Did you find the one you were seeking?"

"I did. Presumably she returned here afterwards?"

The innkeeper shrugged. "I retired early," he explained, blandly. "I was not up for long after you left, so I fear I cannot tell you whether she came back."

"What of my friends? The three Earthmen who were with me."

Once more the shrug, once more the bland smile. "I do not know, Earthman. Have I not told you that I was sleeping?"

Darrity jerked his thumb towards the waiter. "Does he know? It will be worth your while to tell me; the person I was with is a wealthy man."

At the mention of money the innkeeper brightened noticeably and turned to the waiter with a barrage of questions.

The answers were puzzling. Shuurya, it transpired, had not returned to the tavern in spite of the fact that the innkeeper had expected her to do so, while Messenger, Buxton and Wilson had left suddenly, all together, and the waiter had been forced to chase after them since Messenger had left his plastoid coverall on the chair and had also forgotten to pay the bill.

"A wealthy man, you said?" the innkeeper enquired with a smile that was slightly less bland than usual.

"Certainly," muttered Darrity. "That must have been a mistake. Doubtless his mind was occupied with other things." He turned to the waiter. "Did any other strangers come here tonight?"

Not Earthmen but—others?"

The waiter's eyes flicked wildly from side to side. A pale tongue crept from his mouth and slid about his lips in perfect time with the darting of his eyes.

"Well?" barked Derrity.

"I did not see them, Earthman." His voice was low, strained. And it was similar in tone to another voice that Darrity had heard but a short while before—the voice of a frightened old fisherman who had not wanted to admit to being frightened, yet who had been quite unable to prevent himself from showing his fear of something that he did not understand.

"But somebody else saw them?" Darrity pressed.

The waiter glanced appealingly at his employer, then nodded. "Yes, Earthman. One of the customers saw them and I happened to overhear his conversation. He was telling his companions about these two strangers."

The Earthman nodded. "And what did he say about them? Where had he seen them?"

"He said that he saw them walking by the side of the Water of Fire Blooms. He said that they were somehow

not like men at all, though their shape was that of man."

Darrity felt a chill creep about him as though somewhere nearby a window had been opened to let in the coldness of fear. "Go on," he said, softly. "Did they say anything else?"

The waiter licked his lips again. "Yes, they talked for some moments about these men and, as I was clearing the table near to them, I was able to hear what they were saying. I remember that the man who had seen these strangers asked the other, who was an older man, whether he had ever seen such men near Port Latimer."

"What was the reply?"

"The other man said that he had not, but that he had heard many tales about such people."

On the other side of the tavern one of the swamper began to sing in drunken, off-key tones. The song formed a dirge for the dying of the night, for the greyness of dawn was just now starting its fight with the fetid darkness outside.

"What were these tales?"

"I could not stay near for long enough to hear all that he said, but he mentioned that

the people who live in the settlements further into the swamplands believed these people to be gods and that to see them foretells death, for the gods—so this man said—never leave their home unless some danger threatens them from outside, and then their wrath is very terrible.”

The drunk’s voice rose up sorrowfully, shattering the silence that followed the waiter’s words.

Darrity digested what he had heard. Then he asked: “These two men that you overheard—were they sitting anywhere near the Earthmen I mentioned before?”

“Two tables away.”

“Could the Earthmen, also, have overheard them?”

“It is possible, yes.”

“And did these men leave just before the Earthmen?”

The waiter frowned, battling with his memory. At length he shook his head. “I do not know. I cannot remember, Earthman; the evening was too busy for me to recall exactly when each customer left.”

Darrity nodded. “One last thing,” he said. “Could you tell me who these men were that were talking about the strangers? Do you know

them by sight? Do you know where they live?”

“No, I do not know them. I have seen them before, in here, yes, but I do not know what they do or where they live. They might be swampers or—or anything.”

Darrity grunted. The man was obviously telling the truth and had already told as much of it as he knew. The thing now was to rejoin Messenger and Buxton and find out whether they had, as he suspected, overheard the tavern conversation and chased after the speakers in the hope of learning more about the two strangers.

He thanked the innkeeper and the waiter, telling them that he would see to it that they were paid for the trouble they had both taken. Then he left the tavern and headed for the centre of the settlement and for the rickety building at which Messenger had booked rooms for them all earlier on in the day.

And as he strode through the streets that were pallid with the light of dawn on the mist that still wreathed them, it seemed to him that he could still hear Shuurya’s voice, speaking now to his mind rather than to his ears,

speaking softly yet purposefully, urgently, saying, as before: *Danger. Even now there is danger for you, Earthman. Go now. Don't rejoin your friends. Go now!*

Buxton had stayed up waiting for him under instructions from Messenger that if he had not returned by morning they would all set out to try to find him.

"I was just going to wake the boss and tell him you hadn't got back," said the archaeologist, peering up out of red-rimmed eyes. "Frankly, I couldn't see any sense in waiting up at all, but he seemed to think that one of us ought to, if only to show you, when you *did* get back, that we hadn't forgotten all about you." He pushed his chair back and stood up, yawning and stretching. Then he stared at Darrity again. "What in the world *happened* to you? That coat of yours...!"

Darrity laughed, but it was a laugh with little mirth in it. "I got banged," he said, briefly. "I'll keep it till Messenger's down and avoid telling the tale twice over."

It took three-quarters of an hour and four cups of coffee

apiece for Darrity to tell exactly what had happened to him, due to the frequent questions that were fired at him by both scientists. At last he was through. "Now it's your turn," he said. "Did you follow that couple as I suspected?"

Messenger nodded. "We did, but with practically no success. The younger man—the one who had seen these strangers—knew nothing more than the simple fact that he had seen them and had felt afraid of them for reasons which he couldn't explain. The older man, I suspect, knew more than we'd managed to overhear, but he wasn't telling. Kept muttering about not wanting to anger the gods. He even refused the fifty credit bribe I offered him."

"Why didn't you go back to the tavern afterwards to wait for me?"

"We did, but one of the waiters there told us that you hadn't come back and neither had the singer, so we thought we'd come back here. The waiter must have gone off duty without telling the innkeeper that we'd been enquiring after you."

Darrity nodded. "So all we seem to have done is collect

a few more mysteries, rather than clear any up," he said.

"I wouldn't say that," Buxton murmured, speaking round the stem of the pipe that he was lighting. "We've established that this singer exists and we all know, now, from personal experience, that the tales that we've heard about her in the past are more or less true. Old Patterson hadn't had too much *chakka* inside him after all. She can definitely exercise a certain control on the minds of others with her songs and also, it would seem, judging by the way you found her in the mist, simply by thought transference—telepathy."

"True," Darrity nodded, "but . . ."

Buxton held up his hand. "Just a minute. That's not all. This telepathy business is far more interesting than you probably imagine. You'll know that experiments in telepathic communication were being undertaken on a scientific basis on Earth as far back as the twentieth century. But what you may not know is that experiments have been made far more recently using *Venusian* subjects."

"With what results?"

"With rather interesting results. Longdon knows more about it than I do, but I can give it to you briefly. It seems that while there are numerous people on Earth who can communicate thoughts of varying degrees of complexity to others, there are no such people on Venus. But the strange thing is that the Venusians are far more receptive to telepathic communications than the Earthmen. Look at it like this: the Terrestrial telepath is like a thought transmission and reception set combined; the Venusian, whoever he is, can only act as a receiving device and never as a transmitter. That is why I said that this girl is far more interesting to us than you'd probably realised. She is, as we've seen proved, a fantastically powerful *transmitter*, and, as such, is the one and only Venusian so far discovered to be capable of such things. Providing, of course," he finished with a sly grin at Messenger, "that she *is* a Venusian and not simply the wayward daughter of a wayward Terrestrial settler."

Messenger grunted and leaned across the table. "What about that medallion you

said you took off the man who attacked you?"

Darrity handed it across. "I *pulled* it off him," he corrected, somewhat surlily. "And I was pretty lucky to have been able to do that. Those boys were really strong."

Messenger turned the disc over in his hands, then took an adjustable magnifying glass from his pocket. After a moment he looked up, his face flushed. "When you said you were lucky to get this thing, Darrity, you made an understatement," he exclaimed. "It looks to me as if we've now got enough to warrant starting our explorations right away. Here, Frank, you're better at these hieroglyphics than I am. What do you think?" He pushed the medallion across, together with the glass and sat back with a smile of complete satisfaction.

"Well?" inquired Messenger, minutes later, when Buxton took the glass from his eye.

The archæologist nodded. "Yes," he agreed, slowly. "Yes, I think you're right."

"Well, don't think of letting me in on any secret," Darrity complained. "I only came into this thing for the outing."

Buxton turned to him, smiling. "Sorry, Darrity," he said. "Longdon and I are pretty impossible when we're together." He picked the disc from the table and turned it about in his fingers. "This," he went on, "is a remarkable find. To my knowledge there have only been four others similar to it discovered on the planet, all of them in ruins believed to have been built by the Palu-Rua."

The disc winked like a gold eye between his fingers.

"It is a warning, Darrity. The rough translation of these symbols is something like this——" He looked at the disc. "*Let the finder forget that he found. Let the finder who would know the great truth be content with the little truths that are already his. Let the finder flee the spot at which he found this, for if he does not then the gods that are his gods will breathe their breath upon him and he will wither and die as a sharrack fly would die if it were thrust into the heat of a great fire. Let the finder tell no man that he found, or his gods' breath will strike him. Let the finder forget that he found, then may he live within the sheltering wing of his god until death take him.*"

Buxton laid the disc down on the table once more.

"Quite a warning," Darrity admitted. "Any idea as to why it should have been necessary?"

The archæologist shrugged, his eyes still riveted on the medallion before him. "There are plenty of theories. The other four that were discovered were all hung round the necks of skeletons of men who had, it transpired when their remains were examined, all been killed, presumably accidentally, by the collapse of the buildings in which they happened to be standing. The skeletons were taller than those of the normal Venusian, the cranial cavities larger, even, than those of Earthmen. The most generally accepted explanation of the skeletons themselves is that they are those of some very early and also very advanced race from which the present-day Venusians have descended. Descended, you'll note; not ascended. Against that explanation is the fact that only four of the wretched things have been found. If they and the cities they were found in were millions of years old the fact that we'd managed to find only four skeletons would be

understandable, but neither the bones nor the cities are all that old."

He shook his head, frowning. "The thing is packed full of problems, Darrity," he continued, "but the fact that you pulled this thing off a living man who was taller and stronger, I believe you said, than the average Venusian—or Earthman, for that matter—certainly seems to show that Longdon may not have been as far up the pole as I've pretended to believe when he said he thought the Palu-Rua might still exist somewhere."

"But the actual warning," pressed Darrity. "Why would the Palu-Rua go to such lengths to make sure that if anyone found one of these disc things they wouldn't try to take the matter further? Why were they so keen on putting people off the scent?"

"Once again the answer is that nobody knows. It's possible that these johnnies with the discs round their necks were members of some particular sect of the Palu-Rua who had sought to preserve the ancient traditions of their people even after the mass had started going downhill towards what we now know

as the average Venusian. Perhaps this sect put out warnings left, right and centre to try to ensure that what was left of their once mighty race didn't have any further contact with the rest of the—well, what would be to them, degenerates. The sect might have made certain that any of its members that died were cremated instantly, wherever possible, so that their remains might never be discovered. That could account for the fact that the four skeletons that have been found are those of victims of sudden death whose bodies had been buried under fallen masonry." Buxton spread out his hands and moved his shoulders in a vast shrug. "All this is conjecture, you understand; we really *know* very little."

"But this little medallion may be the key to the Golden Gates," Messenger added, tapping the disc. "If we're lucky we may be able to hand science the facts about the Palu-Rua on a plate when we get back."

"What are those designs on the other side?" asked Darrity. "I looked at the thing with my torch when I came to, but couldn't make sense of them."

"Nor can anyone else," said Buxton, shifting in his

chair. "The design is the same on the other four that were found, but nobody's yet come up with an explanation for it. Presumably it was put there for a purpose, but what that purpose was we can't tell. Perhaps we shall be lucky enough to find out, since it seems that the expedition is now a definite project and not simply a dream."

Darrity nodded slowly, but he was thinking of the warning on the medallion. *Let the finder forget that he found. Let the finder who would know the great truth be content with the little truths that are already his.*

And the words were echoed, in his mind, by those he had heard Shuurya speak to him. *This knowledge that your friends are seeking is something that, if they discovered it, would affect them very strangely, very terribly. It would affect all your people, too, if your friends spread news of it.*

The following day saw a great bustle in Port Latimer, a bustle and an excitement such as had not been seen for many a year.

The expedition was being planned.

By flycar and jetboat, equip-

ment was arriving throughout the day from across the Water of Fire Blooms, ordered previously by Messenger in the hope that his faith in the idea of an expedition in search of the Palu-Rua would be justified, as, indeed, it had been. Darrity spent the day, together with Wilson, in collecting porters for the trip, since the greater part of the journey would have to be made on foot, due to the impossibility of landing a flycar anywhere in the treacherous swamps and jungles through which they would have to pass before even reaching the Laykali River.

For the big-game hunting expeditions that Darrity had worked for in the past he had never experienced any difficulty in getting porters, but in this particular mission the local people seemed to have the utmost distrust. He had planned to engage all the necessary men by noon, but it was practically mid-afternoon by the time he had found five men willing to go with him, and he had been told to get at least fifteen.

"They're scared," said Wilson, flatly, as they watched the swamper they had just been interviewing walk away.

"They're scared as hell, yet all we've told them is that we're planning to reach the Laykali. They've done that trip before, most of them, haven't they?"

Darrity nodded. "They must have done," he agreed. "The swamplands are the favourite hunting grounds of these wealthy Terrestrials who come here after *varyas* and such like. Half of the men we've spoken to have probably already been as far as the Laykali, maybe further. No, it's my guess they've got wind of what we're after. In a place like this news spreads fast. It only needed one of them to overhear Messenger talking at the inn that night and . . ." He spread his hands out. "All over town in a moment." He glanced down at the list in his hands. "Well, we'd better keep trying. Fifteen was the number he wanted, but I think we shall be lucky if we get ten."

They got eleven and it took them up until sunset to get them.

"Eleven, eh?" grunted Messenger, when they got back to the shanty the anthropologist had rented as his H.Q. "Well, if no more will come with us I suppose we shall have to be

content, though I'd considered fifteen as a minimum."

He frowned at Darrity. "You say they seemed scared?"

The guide nodded. "Even the ones who agreed to come with us," he assented. "They only said 'yes' because of the money you're offering, and I wouldn't be surprised if they don't run out on us the first chance they get."

"What reasons did the others give for not wanting to join us?"

"Various— and all unconvincing. Wife sick or expecting another child; didn't like the swamplands; too much risk of fever. All the usual things. It was the way they looked and the way they spoke that made me think there was some other and more important reason. My guess, as I told Wilson, is that they've got wind of what you're seeking and don't want to risk angering their gods."

"Well, we can't waste time trying to get men from other districts," Messenger said. "I want to get started as soon as possible now that we've got all the equipment here." He gestured towards the table that was spread with papers, books and maps. "Sit down

there, will you, and I'll go through everything with you so that you know exactly what we're going to do."

They sat down at the table and Messenger pulled a large-scale, hand-drawn map towards him. "This you'll have seen before," he said. "Commander Patterson got it from the first Earthman to attempt a survey of the swamplands, and I believe you used it when you acted as guide for Patterson."

Darrity nodded. "I did," he agreed. "But it surely won't be much use to us since it stops short of the Laykali."

"Ah," Messenger cut in, "but that's where you're wrong. It stops short of the main areas of the Laykali, certainly, but that's because the river curves in a large arc. If you look here—" he tapped the map with a pencil—"you'll see that a certain section of the Laykali is shown."

"Well, yes, but I thought you were heading for the mountains. The other side of that bit of the river is just as flat as this side, and just as swampy."

"You've been there?"

Darrity shook his head. "Not personally," he ad-

mitted, "but I know a guide who has. He told me he went about ten miles in that area and was knee-deep in mud all the way."

"And I'll tell you why that was. He must have walked practically at ninety degrees to the flow of the Laykali at that point. If he'd gone at, say, forty-five degrees and headed up in this direction," he moved the pencil on the map, "he'd have struck a ridge of hard ground after three or four miles. And that ridge rises continuously, and very gently, until it merges with the foothills which, in their turn, merge into the mountains."

Darrity scratched his chin. "You seem to know an awful lot about the area," he said, slowly. "How come you need a guide at all?"

Messenger laughed. "Don't get suspicious," he said, soothingly. "I've never been through the swamplands myself in my life, but I knew a man who had. Fellow named Cassidy. He's dead now, but when he was alive he did a great deal of exploring, just for the hell of it."

"I've heard of him," Darrity admitted.

"I thought you might know

the name. But the point is, Darrity, that while I may know where I want to get to and have maps, porters and equipment, I need an experienced guide all the same." He turned to the map once more. "Now here's the plan: We head straight for this section of the Laykali, cross the water and make for the ridge I was telling you about. Now, somewhere between the start of the ridge and the foothills themselves, there must be some clear ground where a couple of flycars could land. Right?"

"Presumably. Go on."

"We find such a place and then visor through to Wilson, who will still be here, and tell him to join us, by flycar, with the rest of our equipment. We can't start off by flycar, you understand, because of the mists in that area and the difficulty of landing without guidance. When Wilson reaches us we load up with whatever stuff we think we shall need for the next stage of the journey and press on into the mountains. After Wilson leaves, the postmaster will be our contact here in Port Latimer and we shall thus be able to keep up communication with our H.Q.,

as it were, all the time." He looked up, cheerfully. "How does it sound?"

"Fine," said Darrity. "Let's hope everything works out the way you've planned."

"I don't see why it shouldn't. What's worrying you?"

The guide did not look at him when he replied, but stared, instead, out of the window at the darkening streets and the mist and the distant shimmer from the Fire Blooms at the water's edge. "Worrying me? Nothing—or lots of things, rather. Those men that knocked me out and then disappeared; the way they arrived here just at the same time as we did ourselves. And the way everyone seems to know what we're planning to do. Lots of things."

Messenger slapped him on the back and stood up, inhaling deeply, optimism bright in his eyes. "Things'll go off all right," he prophesied, cheerfully. "You'll see. If the Palu-Rua still exist we'll find them, and if they don't, well, we'll at least have explored some unknown territory."

"Let the finder forget that he found," breathed Darrity.

"What was that?"

"Nothing. Nothing at all."

IT TOOK THEM SIX DAYS to reach the Laykali and eight to reach the ridge of solid ground that Messenger had been told about.

It was tough going all the way. It couldn't have been otherwise. The swamplands of Venus are treacherous all over, but perhaps no area holds so many dangers as that between the Water of Fire Blooms and the middle reaches of the Laykali river. And this was the area through which the party passed on the first stage of the actual expedition.

The two days spent in crossing the Laykali and reaching the ridge, however, had not been free from unpleasantness. The porters had been surly and unwilling to obey orders. Darrity knew the cause full well and, when they had made the first genuine dry-land camp since leaving Port Latimer, he tackled the two scientists about it. "You won't get them to move very much further," he said, gloomily. "I've had trouble enough over these last couple of days, but when they realise that this ridge leads up towards the mountains they'll really start howling."

Messenger nodded, rubbing

caked mud off his rubberoid leggings. "Well, we can't complain too much," he said. "If we'd told them originally that we were heading for the mountains we probably wouldn't have got any of them to join us at all. Are they talking mutiny?"

"All but a couple of the younger ones. *They* seem more interested in the thought of the money they'll be getting if they stick with you than in the vengeance of their gods. But the others are all pretty restless. It seems that they've been suspicious, as I suspected, right from the start, and they're now busy telling each other what fools they were to agree to go with you originally."

"Do you think they'll stay for another couple of days?"

"I can try them, but I wouldn't promise anything."

"If they'll stay with us as far as the foothills that'll be something. Once we get to a clear bit of ground we can contact Wilson and he can pick up the mutinous ones and take them back to Port Latimer. Those that will agree to stay with us for the rest of the journey can expect double wages when they've finished. How does that sound?"

"It might work. Want me to tackle them now?"

Messenger glanced across at Buxton. "What do you think, Frank?"

The archaeologist nodded. "I think it's the best plan," he said. "Better to approach them first than wait for them all to walk out on us and take half our stuff with them."

"I'll go and talk to them," said Darrity.

It took him over an hour to persuade them that the scheme was a good one and that there was no trickery involved.

"We were foolish to agree to come with you in the first place," said the self-elected spokesman of the porters. "There were stories about what you were going to do, and we should have heeded them and not believed that you were merely going as far as the Laykali river."

"Stories?" prompted Darrity. "What stories?"

The man moved his shoulders in a huge shrug. "It was said that you were seeking the home of the Ancient Ones. More than one man said that they had seen the god-men walking in the mist on the night that you and the other Earthmen came to Port Lati-

mer. We should have listened to them and not joined you, for such a sight means that danger is not far away."

"Danger!" Darrity exploded. "Have *you* been in danger since we set out? Have we not been very lucky on our journey through the swamp?"

"The luck will not last," replied the porter, stolidly.

When they reached the foothills, two days afterwards, they came to a clearing in the trees—a clearing that was large and level and seemed ideal as a spot on which a flycar might alight. Buxton visored through to Port Latimer, contacted Wilson and told him to set off immediately. As soon as the other man had done so a continuous beam communication was set up by which he could travel direct to the clearing without fear of mists, high trees or hills.

When Wilson landed, nine of the porters were already lined up, waiting to be taken back to Port Latimer as soon as possible. The remaining two, as Darrity had suspected, were more concerned with earning money for themselves than with the vengeance of their gods.

Messenger explained the situation to Wilson as briefly as possible. "Get them back there right away," he finished, "as soon as they've unloaded the equipment. Then return here with your storage space loaded up with extra fuel."

Wilson nodded agreement. "I saw the mountains as I was coming in," he said. "The mist had cleared a bit, the way it does sometimes, and I could just make them out. You think there's a pass through them, or are you planning to go over the top? They're pretty tall, you know."

Messenger chuckled briefly. "There may be a pass or there may not," he said. "But one thing's certain—if it's humanly possible to get through them I'm going to do it, one way or the other." He glanced across at Darrity, who had been standing slightly apart from the others, and who was now staring at him intently. "What's up?" he demanded. "Feeling bad? You look as pale as a ghost."

Darrity blinked, shook his head and grinned. "Nothing," he said sheepishly. "Except . . ."

"Well?"

"A voice. A voice inside my head."

"What are you talking about?"

"When you spoke about a pass through the mountains," the guide explained, "I heard a voice." He stopped talking and closed his eyes, thinking back, remembering. The voice had been a familiar voice. It had spoken inside his mind, urgently, yet with a certain sweetness. It had been Shuurya's voice—or her mind, rather, speaking to him, warning him.

It was not difficult for him to remember what she had said, for the sentences had been quite short, the words few. *There is a pass through the mountains. If you leave the others I can guide you in the way I guided you before.*

He felt a great fear, a great tension in his throat as he stared across at Messenger.

"A voice?" said Messenger. "The same as before?"

Darrity nodded. "She spoke to me again, but more clearly this time. Before, as I told you, it was just a feeling I had that I should find her. But this time it was different."

"What did she say?"

Wilson and Buxton pressed closer.

"She—she said that there was a pass through the moun-

tains, and that if I left you and went off on my own she could guide me through it." He shook his head slightly once more and then paused as though listening for the voice to come again.

"Nothing else? Just that?"

"Just that."

Messenger grinned slyly, brushing a lock of his ginger hair out of his eyes. "It seems the old gods are being kind to us," he said. "Darrity has obviously made a conquest with this girl singer and it looks as if we're all going to be led right to where we want to go."

"But she said I was to go alone," interposed the guide.

"And so you will," nodded Messenger. "So you will. But now that we've got all our equipment with us what's to stop you taking a wrist radio with you and keeping in contact with us while you're being led to this pass? We can all keep at least a mile behind you and you can set your radio so that it sends out a straightforward directional guide beam. That way we can follow you easily enough. Right?"

Darrity nodded slowly. "I suppose that's sound enough," he said, slowly. "I hope that this isn't some kind of trap."

Messenger shrugged. "I hardly think the lady would want to trap you after having gone to such lengths to warn you off."

"All right, then," Darrity agreed. "I'd better start right away and trust that she'll start to guide me when I begin to make towards the mountains." He strapped a pack of emergency food capsules to his belt and checked that his two hand blasters were both fully charged and sufficiently loose in their holsters to be drawn without difficulty. Then he linked the tiny wrist radio round his left wrist.

"Who's going to wear the contact?" he asked.

Buxton grunted. "I'll wear it," he said, briefly, and walked towards the stores. Minutes later, the contact beam having been established between the two tiny radios, Darrity waved a good-bye to the others and started off across the clearing.

Darrity walked steadily, unfaltering, for there was a strange power within him that guided him through the darkling forest that clothed the foothills as a rug clothes the space before a hearth. Within him there was still some of his

real self, but this was hidden and deep and subdued now. The guiding power that moved his legs and told him that here was a tree and there a swampy patch and over there a pile of brushwood in which some beast might have its lair—that came from outside, from ahead.

The real Darrity, now and again, when he surfaced, as it were, out of the deeps of telepathic domination that held him to his path, remembered to snap the toggle on his wrist radio and speak into it to Buxton and assure him that all was well.

"Buxton?"

"That you, Darrity? You've been a hell of a time. I've been trying to get through to you for ten minutes or more. Didn't you feel it?"

The wrist radios were equipped with a tiny stud that pressed against the inner part of the wrist when someone was trying to make contact. The stud had been tickling Darrity's wrist for a long time, but he had not noticed. "No," said the guide, dully. "Sorry, I didn't feel it. I'm all right, though, and pressing onwards. Still with me?"

"Mile and a half behind, approximately, but we're lag-

ging. You must have eyes in the dark to be able to make this sort of progress."

"Someone else's eyes," murmured Darrity, walking in the gloom.

"Ground started to rise noticeably yet?"

"Eh?"

"I said 'has the ground started to rise noticeably yet?' Are you getting higher?"

"Not yet. Nothing to speak of. Still lots of trees." He pressed his wrist closer to his ear straining to hear, Buxton's tinny voice sounding over the distance that was but a few thousand yards, yet seemed to him as great as the spaces between the stars.

"Are you all right? You sound funny. Anything wrong?"

"Nothing wrong. Hard to talk. Other thoughts. Guiding."

"Darrity!"

"Good-bye." He snapped the toggle to "off" and let his arm fall to his side. The thought of Buxton and of the party that was following behind left him instantly, and there was only the darkening night and the eldritch shapes of the trees and the deep force within him, guiding his feet

onwards on a certain path towards a certain goal.

The night was a deep throbbing of secret sound. Here, in the dark, was the deep growling of a *greelach* bear, a slow-moving monster, yet with a gait remarkably stealthy for a beast of its size. And over there, beyond a pool, rising from the gentle slope of the hill beyond, came the harsh staccato bark of a *sheena* as it prowled the gloom in search of prey.

But these sounds, and all other sounds, in fact, were almost lost to the Earthman who walked so surely on his way. He heard them, but only with a small part of his mind.

When the trees thinned out and had their places taken by low, scrubby bushes, and when the ground started to rise at a steeper angle and his progress became more difficult, he contacted Buxton again. It was two hours after the archæologist's last call to him.

"Ground getting steeper. Bushes now; no trees. Sandy sort of loose soil underfoot."

"My God, are we glad to hear from you! Can't you try and make contact more often?"

"Told you before about

that. Difficult." His voice was very taut, his words clipped off as though he had switched off his set after each one and then switched it back on again.

"O.K., O.K. But try and call us more often. We've tried to get through to you four times already without success." His voice broke off. There was a pause, then he continued speaking. "Longdon says to tell you that he wants you to be sure to contact us the moment you see anything or anyone up there. Shuurya or anyone. Got that?"

"I've got it," assented the guide. And in his mind, even as he spoke into the radio,

words formed. *You are drawing near, beloved.*

"Beloved," breathed Darrity.

"What's that? What did you say?"

"Nothing. Nothing. I'll contact you. Good-bye." He snapped the toggle.

Ahead of him the hill rose steeply. A wind blew down on him as he scrambled upwards and onwards, blew down from the cold heights with a warning song that told him shrilly and eerily that he should not continue but should resurrect that part



of himself that had been buried and let it fight its way out of the telepathic domination of the strangely luring external mind, told him that he should flee back to his companions and make them, too, turn their backs on the cold mountains and the things that lay beyond.

The speaking of the wind was lost to Darrity. He gained the summit of the hill and started across some fairly level ground that was studded with boulders of varying sizes. His steps were quicker now and he loped purposefully on, hearing the voice of Shuurya within him and seeing always in his mind's eye the image of her as she had been on that certain night in the Place of Harps and of Visions and had given a tangible—though momentary—reality to his innermost desires.

Time passed. A lot of time passed, in fact, but its passage was hardly noticed by the hurrying man, for his mind was full and his legs tireless.

The level ground, which was a plateau, stretched on and on and gave way, in time, to yet another slope, this one steeper by far than the first. And above this there was another plateau, like the

second vast step leading to a giant's front door.

Vaguely he knew that he was nearing the source of the voice; was nearing Shuurya. But there was now a faint feeling of unease, also, in his mind. Why should she be luring me through the mountains? questioned the small part of Darrity that was still *really* Darrity. Why should she want me to continue, when originally she warned me off?

He turned past some tall rocks, still obeying the inner voice, while the sky started slowly and softly to lighten with the dawn. An hour later, when the night had gone and the world was a pale stretch of mist, he came to the vast barrier of the mountain chain. And he came, too, with very sure steps but with the glazed look of a somnambulist on his face, to the narrow chasm that he knew without being told, led through the mountains to the Stronghold of the Palu-Rua.

Even then, with this first stage of his solitary journey completed, he had no thought of rest. The demon that lured and goaded and sung him siren songs seemed not to know that men need rest, or, if it knew, seemed not to care.

Within the great fissure that formed the entrance to the passage it was dark once more, and cold with the damp iciness of those places the sun's rays can never reach.

The sun rose sluggishly into the heavens and started its diurnal crawl towards the zenith. And the hours passed while it made this journey and while, below it, another journey was being made—a journey that led through narrow chasms, along ledges, up steep and winding paths and down other paths that were equally steep and equally winding.

At last the narrow chasm widened out, became a small valley. On either side of it the towering walls became less towering, more gentle. And then the valley and the hills smoothed out and merged, and Darrity was standing very still, looking about him, wreathed in trailing vapours of mist with the sun somewhere overhead, vainly endeavouring to send its rays down and give a little warmth to this benighted spot.

Had the Earthman looked at his watch, then, he would have found that it was almost three o'clock in the afternoon, and he would have remem-

bered that he had set out nearly twelve hours previously and had walked, scrambled, crawled or had run for the entire time, with no rest longer than a couple of minutes at the most.

But he had no thought of time, nor of those others who, behind him, somewhere, were following the beam emitted by his wrist radio. He stood very still.

The air was chill and the mist as pale as milk.

And the voice was no longer speaking to him; the cord that had dragged him through forest and over hill and plateau and, eventually, through the mountains themselves, was cut and he was Darrity once more, and only Darrity, standing bewildered in a misty half-world. Then the faint whispering voice that had been asking questions of his unheeding other part through the length of his journey became a very loud voice indeed.

Why would she have wanted to lead you to this place when she originally warned you off the whole expedition? Why? Why?

Then came the thought of the others. He raised his

left arm and brought his right hand across towards the wrist radio and——

——And heard the words in his mind, telling him that he could not move another muscle but must freeze, become a solid image. The words were not Shuurya's. It was another voice, this time, that was speaking to him; a deeper and harsher voice that had none of Shuurya's warmth in it, but only a cold purpose.

Seconds later the figures stepped out of the mist ahead of him. There were three of them, and he had seen them all before, one of them quite clearly and the other two only as vaguely discernible assailants in the gloomy night of Port Latimer.

The first man was taller than Darrity, broad and handsome and with a lithe strength in his movements. Behind him the second man urged Shuurya forward roughly, and Darrity could see that the singer's arms were bound and that some sort of a metal helmet had been fitted round her head.

He tried to move, tried to force his right hand towards his left so that he could snap the toggle on his radio and thus let Buxton and the others

overhear whatever was going to be said. But it was no use. His arms were as rigid as his legs.

"Who—who are you?" he demanded, speaking in the dialect of the Port Latimer swampers.

The reply came to his mind, not to his ears, and the other's lips did not move. "I shall communicate with you in this way, since I am not used to the tongue you speak. Who am I? Who but one of the men you are seeking."

"One of the Palu-Rua?"

The man smiled and the smile had much sadness in it and very little mirth. "One of the Palu-Rua, yes, Earthman. One of the Ancient Ones."

"It was you that attacked me in Port Latimer?"

The man nodded. "Unfortunately it was necessary," he said, speaking with his mind as before.

"Necessary? Why was it necessary? Did you intend to kill me, or merely to knock me out?"

"Merely to knock you out. We knew then that we could not prevent your leading these other Earthmen in search of

us, or could not prevent them from finding another guide such as yourself. We simply had to put you out of the way for a short period in order to prevent you from finding Shuurya before we did. In that, as you will know now, we were successful." He indicated the two figures behind him with a gentle motion of his hand. Then he continued speaking. "Frankly, Earthman, we had to ensure that the expedition left Port Latimer and got sufficiently close to our stronghold for our people to deal with it, or else we had to prevent all members of that expedition from ever leaving Port Latimer at all. We chose the former way because we reasoned that if we were to kill all your friends and you yourself before you left Port Latimer some kind of investigations would be made."

The words made a stark and horrible sense to Darrity. "Then Shuurya deliberately lured me here, knowing that the others would follow, so that you might be able to deal with the lot of us?"

"In a way that is correct," the man agreed. "Though Shuurya did not do so of her own accord. It seems that



she was moved towards you when first she saw you and thus, later, warned you to leave these other Earthmen. We realised that you would, therefore, consider her a friend, rather than an enemy, and might well follow her commands."

Darrity looked towards the girl, staring past the man who was speaking to him. The helmet that she wore on her head had two terminals on the front of it, like tiny horns, and from these wires ran to similar terminals on the hel-

met of the man who held her, and from a third terminal on his helmet a lead ran down to a small machine something like a radio set that was slung about his neck. Slowly he began to gather what must have happened. "You forced her to send out those thoughts, then?"

The first man nodded. "It was the best way to get you here, and we knew that you would ensure that the others followed you." There was no malice in the voice that spoke inside Darrity's head, telling him these things. No malice; only a steely purpose and calmness, with perhaps a touch of sadness.

"But why have you gone to this trouble?" the guide demanded. "We mean you no harm. The people I work for are not blundering fools who want to destroy everything they find; they are scientists. They had heard the rumours of the Palu-Rua and wanted to discover if there was any truth in them; that is all."

The man nodded. "We know that," he said, simply. "But it is best that they find out nothing."

"Best for whom? For you?"

"For all people. For your

race, Earthman, and for the people of Venus, also. And for us."

"But you can't expect to keep yourselves hidden forever," Darrity exploded. "It wouldn't be possible. If you kill every Earthman on Venus you won't be able to prevent others coming here to find out what happened to the ones you killed. And if you kill *them* you'll only bring more on their heels. I don't know how many you number altogether, but it stands to reason you'd be outnumbered and discovered in the end."

"You're right, of course," the man agreed. "We know quite well that in due course others, like those who employed you, will come here to try and seek out our people. Now that the Earthmen's commercial interest in Venus is finished it is plain that others will come to seek the more important things that this world contains. But the position is not quite as you imagine, Earthman, for it will soon be quite unnecessary for us to prevent your race from searching for the Palu-Rua."

"Your people are dying out?" Darrity questioned, remembering Buxton's theory

of the separate sect of the Ancient Ones striving to retain the old traditions and fighting tooth and nail to keep apart from all outside influences.

The remark seemed to amuse the man, for he smiled and his eyes flicked to one side, briefly, to catch the glance of his companion, who smiled also. "Hardly that," he said, with a shake of his head. "But rather, let us say, that we are leaving. And it so happens that your expedition coincided with the preparations for that departure. Had you set out in a month's time you would have discovered enough remains—specially prepared for you to find, incidentally—to prove that the Palu-Rua had indeed existed, had had their capital in this valley and had been of a more advanced type than are the Venusians of the present day. Your employers would doubtless have been disappointed that there were none still living, but at least they would have discovered sufficient to satisfy their curiosity regarding our people."

He paused and rubbed the side of his beak-like nose. Then he went on: "However, since your expedition did not start out a month hence, but, instead, only a few days ago,

it was obvious to us that something had to be done about it. We could not think of speeding up our own departure, nor could we think of letting you discover us."

"So you decided to kill us all?" Darrity asked.

The man nodded slightly. "It was the only way, Earthman," he said, and the words, as they sounded within Darrity's mind, seemed to have a genuine pity in them. "I can see that you are puzzled as to why we should take so much trouble to keep our identity a secret. The reason is a very good one, and I can assure you that you would be better off if you were to die not knowing it than if you died with that reason made plain to you."

Darrity licked his lips. The fact that he was going to be killed was something at which his mind had shied, instantly, as soon as he had heard the man speak of it. But since then, while the conversation had continued, his thoughts had returned to the actual idea of his own death.

His mouth was very dry. His limbs were rigid. "And if I prefer to die knowing why you considered my death essential?" he asked.

The man shrugged. "You would be a fool to do so," he replied.

"What of the others? Messenger, Buxton, the porters? What of them?"

"They will not know. They will simply die, very suddenly, in a fall of rock in the chasm through which they are now passing. It will happen in a very short while."

Darrity stared from the man to the couple who stood just a little behind him, his eyes wide, his mouth working soundlessly. "You're doing the same to them!" he gasped at length, seeing the fixed look on the second man's face and the expression of strain on that of the girl. "You're making Shuurya lead them through the chasm."

"We are. That device enables my companion to transfer his own thoughts to your party. His message is that you are in great danger and that they must hurry if they are to save you."

The wash of blind rage that had flooded through the Earthman as soon as he had realised what was going on was dissipated by the feeling of his own helplessness.

"You've got explosives in that chasm?" he asked, his voice dull.

"Only a very small quantity, but enough to start a landslide big enough to crush ten times the number of men in all Port Latimer. There is a photo-electric cell concealed there. We let you through first in order that your radio should continue to send out its guiding beam while the others entered the passage through the mountains. We did not want to kill you until we were sure of being able to kill the others also."

"But why is all this necessary to you?" Darrity demanded once again. "If you're going to kill me it can't hurt you to tell me why you're doing it. It can't help me and it can't hurt you to tell me exactly who you are and why you need this secrecy."

He had hardly finished speaking when, from behind him somewhere, muffled yet ominous in tone, came a deep rumbling and booming.

Darrity knew very well what it was. He felt a sudden and overwhelming compassion for the two scientists who were now, in all probability, already dead, for he himself had been in a way responsible for their death. If he had used his common sense he might have realised that he was being led into a

trap and that the others would be following him straight into it also.

The second of the Palu-Ruans lifted the helmet from his head and let it hang about his neck on its straps. Then he took off Shuurya's helmet.

"If you are certain that you wish to be told everything," said the first man, slowly, watching Darrity's face, "then you had better follow us. Are you certain?"

The Earthman nodded stonily. "I am certain," he said.

THEY STRODE OFF into the mist, the four of them, Darrity walking between the two men, the girl following behind, her hands still bound and presumably, Darrity concluded, under some telepathic control that prevented her from attempting to run away.

The mist swirled all about them as they walked, and the Earthman found difficulty in seeing more than twenty yards or so ahead of him. But his captors, it seemed, knew the way of old, for their steps were sure and unfaltering.

They walked in silence for some little while and then,

as they approached a dark smudge in the mist that turned out to be a building of some kind, the first of the Palu-Ruans spoke to his mind once more.

"What are the tales you have heard about us, Earthman?" he queried.

"Numerous tales," Darrity replied. "That you were once very powerful here on Venus; that you lived forever and were all very strong and beautiful and intelligent. The present-day Venusians think of you as god-men and some of them believe that you still exist, while others, whatever they believe deep down, will not talk of you, thinking that to do so will bring them bad luck."

"And these Earthmen who employed you—what were their ideas about us?"

"Originally only one of them really believed that you might still exist, but since then the other one came to believe also. One of their theories was that you, the ones still living, were the descendants of some separate sect of the Palu-Rua who had preferred to remain cut off after the others had mixed with the lesser races to produce the present-day Venu-

sians." He looked at the man, sharply. "Is that the truth?"

"No, but it is near to the truth, in a way. We certainly preferred to remain cut off, but not for that reason."

They had now reached the building and Darrity saw that it was very old, very crumbled. He remembered seeing photographs of the ruins of Rualyki and saw the similarity instantly.

"This is one of the ruins that some of your people will probably find, eventually. They will say, then, that this was the centre of an ancient culture that had been extinct for many, many thousands of years, but they will never know the truth." He turned to Darrity sharply. "How have your people explained away the fact that there were humans here on Venus when they arrived in their space ships?"

"Parallel evolution," said Darrity, dully. "They thought then that all life followed similar development patterns, providing conditions were also similar on the various worlds where such life evolved."

"And now that your people have reached the stars and the planets of the stars? Now that they have found such

varying forms of life on planets similar, so far as conditions are concerned, to Earth and Venus?"

"There are a lot of theories."

"Have they considered the fact that while remains of prehistoric types of man have been discovered in abundance on Earth, no such remains have been found here, on Venus?"

"They haven't explored Venus very thoroughly yet."

The man nodded. "True," he admitted. "But when they *do*, I can assure you they will not find a single trace of prehistoric man on this planet. They will find skeletons, yes, but they will be similar in all respects to those of men living today."

Darrity remembered Buxton telling him about the medallions that had been found on skeletons that differed to those of normal Venusians. "You're wrong," he said. "We have discovered some skeletons that differ, so I was told, from those of the average Venusian." He explained what the archæologist had told him.

The Palu-Ruan nodded slightly, smiling. "Ah yes, but those were not skeletons of prehistoric humans," he

said. "They were skeletons of our people who were killed in such a way that the rest of us did not know where to look for their bodies, and thus could not prevent them from being found, eventually, by chance searchers or by your scientists. The medals were to warn off the superstitious Venusians." He smiled again and touched his chest briefly as he continued: "The one you wrenched off me I should not, of course, have been wearing at all. It was our sole mistake."

Darrity felt he was losing the main point of the argument, and despite his loathing for the cold-blooded way in which these men had murdered his companions, he could not help but be interested in what was being told him. "But why will no remains of prehistoric humans be found here?" he pressed. "The present inhabitants didn't just arrive here from nowhere."

"True enough. They didn't arrive here at all; they were brought here."

"Brought here? By whom? How?" His mind was whirling.

"They—or their ancestors, rather—were brought here by us, Earthman, from your own

planet, a very long time ago. They were brought by spaceship and left here to breed, and thus found an entire race."

"You're asking me to believe your people transported humans from Earth to Venus by spaceship and nobody knew anything about it?" Darrity asked, incredulously. "That's ridiculous."

"It may seem ridiculous to you, but it happens to be true. This occurred, I may say, within a few thousand years of our initial experiment on Earth itself."

"Experiment?"

"Yes, the speeding up of the evolutionary processes in the development of the highest form of life at that time extant on Earth. Briefly, by artificially induced mutations, we created the type known to you as Cro-Magnon man, the first *homo sapiens*."

A bombshell seemed to burst inside Darrity's mind. Everything he had accepted since he had first learned to read, every fact, every theory regarding the origin of his race, seemed to scatter in a shower of bright and burning sparks. For, though no proof had been offered him in defence of the things he was now being told, he felt that

they could be nothing but the truth, since he was shortly to be killed and his captors could gain nothing by lying. "Then—then who—*who are you?*" he stammered finally.

"Far from what we seem, Earthman. That is why I warned you that it would be better if you died before hearing these things. You, as an Earthman, have come to accept certain basic postulates regarding your origin. You do not think about them consciously, perhaps, but they are deeply rooted within you. From my ability to probe your mind I have learned the depth of those roots and, though you yourself might doubt it, they are very firm and very deep indeed. With those roots gone your mind might well unhinge entirely. I wanted to spare you that, even if it should last only for the fraction of a second before you die."

"Tell me the rest of the story, then," Darrity said, dully. "And save the worst of it till last if you want to. I've heard sufficient already to be past caring whether the remainder drives me mad or not."

The man shrugged. "Very well then, if that is the way

you wish it to be." He fingered his chin as though wondering where to begin his tale, and how to frame it for this Earthman's mind so that he would best understand it. At last he said: "Your people have found many intelligent life forms on the worlds that circle other suns, have they not?"

"Yes."

"Some of these forms are quite as intelligent and as developed as humans. Is that not so?"

"It is. What of it?"

"Could you envisage a race of beings so infinitely greater in intelligence than anything else alive, that humans, to them, would be something like mice would be to you yourself?"

"It's hard to visualise such creatures," Darrity said, slowly, "but I can't see any reason why they shouldn't exist."

The man nodded. "They do exist," he said, flatly. There was such certainty in the statement that the Earthman did not think to doubt that it was true. "Their home worlds are very far from this galaxy but, because, like you Earthmen, they are a curious people, they have explored

far and wide in the great spaces between the nebulae and between the stars that form those nebulae. Like your people, also, they are given to experiment. Like the primitive Earthmen who first mixed such-and-such with so-and-so merely to see what would happen when they did so, this other race, on a far vaster scale, have made their experiments. But they experiment, not with inorganic matter, but with life itself. They start a strain on a certain planet, watch it grow, record the progress of its growth, see whether it grows tall and healthy, so to speak, or whether it wilts and dies or strangles itself in the actual process of growing."

"And we," Darrity said, very softly, thinking about it, "are the results of such an experiment?"

"You are. How long the Neanderthals would have reigned supreme before gradual changes occurred, or before a natural mutation came about, had the experiment not been made, I do not know. But the experiment was made. The Great Race mutated the Cro-Magnon, watched it grow for a while and then, seeing the way it was growing,

decided that a variation in the mutation might well be made in order to produce a strain just that much different. The results of this second mutation were transplanted here, to Venus. The difference in the two types is not great. Indeed, it is so slight that your scientists have not yet bothered to consider it a basic difference at all. They say, I think you will agree, that the Venusians are a backward people who may, possibly, have degenerated from a higher form that existed thousands of years ago. They are wrong, of course. The difference is a subtle one, but a definite one. Your Earthman seeks to be *above* all things, while your Venusian, poor, backward creature, seeks to be a *part* of all things. He does not want to conquer the universe, but is content to live his life quietly and calmly and consider all things—whether they be his human neighbours or merely rocks in the field—as being equally a part of the whole vast pattern. He knows that greatness cannot come through his conquering other things, other beings, but can only come through his conquering the baser parts of his own mind. And that conquest,

is Earthman, being made, slowly, as generation succeeds generation."

"Certain Earthmen sought to conquer themselves," Darrity said. "There are many cases in the history of my people that prove that."

"Again, you are right," the Palu-Ruan nodded. "But the men and women of whom you speak are simply minor natural mutations that are bound to occur in the course of a race's growth. But the differences are not perpetuated through to the following generations in such cases, while with the Venusians they are. That is the difference."

Darrity switched his gaze from the speaker to the towering wall of the ruined building directly to his right. Then he said: "So far as this Great Race of yours is concerned, then, *homo sapiens* is an experiment that didn't come off."

The man shrugged. "It didn't come off, true, but for a long while there was an indication that it *might* come off. These isolated mutations that I mentioned just now might have been very important; the mutated characteristics might have been handed down and, if they

had been, then the experiment would have been very successful. But they weren't handed down."

"The Great Race has turned its thumbs down on us, then?" He felt very cold and alone and helpless. He was going to die in a very short while. He could afford to be cynical.

"It's too late for that," said the Palu-Ruan.

Darrity looked at him in surprise. "Too late," he echoed. "What do you mean?"

"Simply that during the period when the Great Race were deliberating as to whether your people should be destroyed entirely or not—during the latter half of the twentieth century, if you want to know the exact time at which your ancestors' fate was being considered—you solved the problems of space travel, reached Venus and discovered that there were other humans in the Solar System besides yourselves."

"How did that change things?" Darrity wanted to know.

"Surely that much is plain? Your people had arrived on the world in which we ourselves had our headquarters. We knew full well that we

were safe so far as the Venusians were concerned, but that you Earthmen were more curious. If we had engineered a major disaster on Earth and destroyed your people there, we still would have been unable to destroy those who had reached Venus. And if we destroyed those who had reached Venus, then the Venusians themselves—the selected strain, remember—would have been bound to have been affected in some way or other, and that was something that the Great Race wished to avoid at all costs. They had protected Venus for a long, long time against possible contact from other races that developed space travel more swiftly than had been thought possible. They set up the artificial cloud layer that forms this planet's outer covering and ensures that astronomers, no matter how powerful their instruments, cannot see the surface even if they are in a spaceship only half a mile above the clouds themselves. They set up the oxygen reflector layer also, so that spectroscope readings from Earth would show that Venus had scarcely any oxygen in its atmosphere. But despite

all these precautions your people still set out.

"As you will know full well, the first ship that landed here was equipped with oxygen tanks and special food capsules and so on because the Earthmen considered that, to make Venus inhabitable for man, an artificial atmosphere would have to be pumped out over the planet. The Great Race had not bargained for such determination. They had considered that this world was quite safe from intrusion."

"So when our people got here you had to change your plans?" Darrity said, slightly truculent, despite his own position.

"Exactly. The Great Race considered that the Venusians themselves, being, in fact, more highly evolved than you Earthmen, would be able to withstand all onslaughts, whatever form they might take. But while the problem of the well-being of the Venusians themselves seemed relatively assured, that of the Earthmen was more troublesome."

"The Earthmen were dangerous, you mean?"

"In a way, yes. They were intelligent, they were curious and, above all, they desired

to conquer, both individually and collectively. However, the Great Race, through their knowledge of what had happened with similar examples of their experiments that had gone wrong in the past, decided that there was ample evidence that the genus *homo sapiens* would extinguish itself in a puff of atomic flame long before it reached the point of being a real danger. And that is the biggest mistake, to my knowledge, that they have ever made, since your people discovered the Dixon drive and were thus handed the stars, as it were, on a platter."

Darrity nodded silently, thinking. Then, as the man had not communicated any further thoughts, he said: "Then it was too late to do anything about us, I presume?"

"Not exactly too late, but too dangerous. The Dixon drive itself was conceived by a fairly large body of men. Each of those men could have met with an accident before their theoretical work could have been put into practice, but so many separate accidents would have aroused suspicions of some kind or another, and such suspicions *had* to be avoided at any cost.

Consequently the Dixon drive was allowed to be developed and your people have sped off to the stars. The Great Ones knew your ways sufficiently well, since they had been watching your progress for a very long time, to know that we ourselves were safe here on Venus until the time came when the commercial wealth of this planet was exhausted and men with other motives started to take an interest in the place. That has only happened relatively recently, as you know, since, among Earthmen, searchers after knowledge are infinitely fewer in number than searchers after wealth."

"And then you had to get away or risk discovery?"

"Exactly." His eyes flicked to his companions, briefly, and then returned to Darrity. "Since I'm telling you the entire story there's no harm in admitting that all the others have already gone from Venus. We are the last three. We remained to put things in order, here, so that should your scientists find this place they would think simply that the Palu-Rua once existed, thousands of years in the past, but that any thought of their still being alive could only

be legend, fostered by the superstitious Venusians. In about two weeks our work here would have been finished and we ourselves would have gone from this planet. Unfortunately your scientists decided to explore this region at an inopportune moment."

"So you killed them," said Darrity, savagely, the thought of the brutal murder coming back to him.

"What else could we do?" the man asked, simply. "Consider the matter from our point of view and from that of your race as a whole. Could we risk this man Messenger finding us, or finding some trace of our having been here recently? Could we risk your people discovering, *en masse*, that they were the direct result of an experiment carried out by aliens from another galaxy many thousands of years back into the pre-history of Earth? Is the death of five men too heavy a price to pay to keep such a secret from an entire race? Surely it is not, when you look at it objectively as we have had to do. I tell you, Earthman, that we have taken no pleasure in killing your friends. There was no malice attached to the act. No malice

at all. It was simply a necessary measure. We had our instructions as to what had to be done here before we left, and we had to carry out those instructions."

There was an earnestness and an honesty in the thought-words that formed in Darrity's mind that could not be denied. "Instructions," he said, thinking over what had been said. "You get instructions?" He remembered how the man had always used the term "The Great Race" rather than "us" or "we," and that he had spoken of his own people in a slightly less reverent way. "Aren't you the people who give the orders, then?" he demanded.

"No, Earthman, we do not give the orders. We merely obey the orders. We are those who were stationed in this system, by the Great Ones, to watch over the experiments they instigated. Countless times, in the past histories of both Earth and Venus, we have intervened in one capacity or another, to influence humanity in a certain way, according to the dictates of the Great Race. In a way we have been shepherds, seeing that our sheep do not stray from certain

paths; we have been angels, if you like, watching over two sets of humans, whether angels of light or angels of darkness it would be difficult for us to say, of course. We have had to be objective in all our dealings with your people and with the Venusians also, and, therefore, many of our actions may have seemed bad at the time, to those who were affected by them. But then we had to look at the overall result of our action rather than its effect upon certain sections of the race."

"Angels," Darrity breathed, watching the man.

"The term may not be a very good one," the Palu-Ruan agreed, with a slight smile. "But are you beginning to understand why we were forced to prevent your friends from reaching us?"

"In a way, yes," Darrity admitted. "But I don't see what Shuurya was doing at that tavern. If you wanted your privacy so badly why did you let her roam among Venusians and Earthmen in that way? It doesn't make sense to me."

The man's face hardened. "Ah," he said. "Shuurya, yes."

"Well?"

"Shuurya is what you might call a fallen angel," said the Palu-Ruan, softly. "We have let her stay among the Venusians because she was clever enough to evade us for so long and thus become accepted in Port Latimer. Once that had happened we did not think it wise to try to recapture her because of what the Venusians themselves might have thought if she disappeared suddenly. True, we have captured her now, but then we are all going to leave the planet very shortly." He turned and stared at the girl coldly, but continued to speak to the Earthman. "We are all equipped with a certain amount of emotion, Earthman, but because of our task we must not let that emotion interfere with our work. Most of us, despite the fact that it may be very hard to act objectively, have managed to control ourselves. Shuurya, however, could not do so. That was why she deserted her post originally and why, for a long while, we sought to kill her. That, too, is why she tried to warn you against joining the expedition and why she had to be forced to return here with us. When she read your mind,

while she was singing, she saw something that she considered worth saving, you see, and thus tried to protect you from harm."

Darrity stared at the girl, remembering the way she had looked that first night at the Place of Harps and Visions, remembering the torchlight on her hair and the way her hands had flown like birds across the strings of her harp that was, even now, hanging about her shoulders. And he remembered the sound of the harp and the sound of her voice, raised in song. "That music . . ." he started.

"The music? Ah, yes. I do not wonder that it fascinated you, Earthman, for it is, as you will have guessed by now, the music of another race. You wonder about the legends? You wonder why certain powers are ascribed to the Palu-Rua that do not seem to fit in with your own experiences of our people? That is simply explained. We provided the Venusians with a set of legends; a set of racial memories, one might say, artificially induced at the time of the transplantation. We did so in order that they might have something rooted in their minds, already, re-

garding whatever traces they might find of our own people and the places in which they had worked while using Venus as their base of operations." He spread out his hands easily, as though to say that the story had ended.

"But if you're not members of the Great Race and you're not human, then what in hell are you?" Darrity almost shouted.

"We are androids," said the man, quietly, watching Darrity very closely. "The Great Race, when they came into this part of your galaxy in their great ships, made up artificial creatures as prototypes of the life forms they planned to evolve on the various planets. They saw the Neanderthal, modified him on paper, developed him, as it were, and then, before carrying out the actual mutation experiment, constructed us, artificially, in order that we might be able to move among the new type of being—namely *homo sapiens*—without arousing suspicion. Consequently you were unable to think of us as anything but human beings. But now you know differently. We are androids, Earthman. Synthetic creatures made up on a

spaceship laboratory in the days when mammoths and woolly rhinos roamed your home world. Only great force can destroy us, but, since accidents can occur even to androids, we have a bone skeleton so that when our bodies are found the discoverers will think them the remains of humans and will suspect nothing of the truth."

"And now you say you are leaving Venus?"

"We are," the android agreed.

"How? Is this great spaceship coming here to pick you up?"

The android shook his head. "No, we have a matter transmitter here. We step into it and are immediately transformed into energy wave patterns that are projected through space to the spaceship of the Great Race, wherever it happens to be. There, within the ship, the wave patterns are reassembled as matter. The greater number of our people, as I said, have already left. We three are the only ones left, in fact, and within two weeks' time we also shall be gone. As soon as the last of us has reached the spaceship the transmitter itself will be converted to energy

patterns from the ship itself, and that will be the end of our contact with your race. Whether your race will contact the Great Race, given time, is another matter. From what I have seen of your progress since the Dixon drive was invented, I should say that it is very probable."

Darrity waited for more of the man's thoughts to take shape inside his mind, but there were no others. He looked up, strangely conscious of the fact that he was now talking not to a man, but to a synthetic android, constructed by some alien race before the first Cro-Magnon ever walked on Earth. And he knew, too, that the android had ended his story and that it was, therefore, near the time when he himself would be killed, mercilessly, without any malice on the part of the others, but merely as part of a pre-arranged plan.

The android nodded. "Yes," he said, slowly, "that is the end of the story, and now it is time for us to get to work. You have taken it better than I expected, though I suspect that if you were to live, it would eventually prey upon your mind to such an

extent that your only escape would be in madness."

There was no telepathic thought control over his limbs, now, he found, but he realised full well that if he were to try to draw his blasters and fight his way free one or other of the androids would make a statue of him before he had his weapons clear of their holsters. "How—how are you . . ." he started.

"How are we going to kill you? It will be almost instantaneous," the android assured him. "But in order to make it seem like an accident, just in case your body is found at some later date by Terrestrial scientists or explorers, we shall have to make the 'accident' look authentic." He turned away, then, but another voice sounded within Darrity's mind. A voice he had heard before, the voice of Shuurya.

"You are to be killed by a fall of rock inside one of the ancient buildings," she told him. "There are no explosives inside, but the stones will fall when you reach a certain spot in a corridor at the end of which you will see a light. Before you are taken to the building I will give you my harp. Then, when you are

inside, in the dark, strike the string next to the crescent very sharply and the vibrations should be enough to bring the masonry down. The others will enter afterwards to ensure that you are not still alive, but you will have to try and hide somewhere within the building and avoid them."

Darrity blinked. The words had rattled through his mind at frantic speed and he had hardly had time to get their full meaning before the first android took hold of his arm.

"Come," he said, softly. "And do not try to escape. It will only prolong matters and you have no chance of succeeding."

Shuurya darted forward, unslinging her harp, the same look in her eyes that he had seen on that first night in the tavern. "Here, Earthman," she said. "A gift from a fallen angel."

The first android made as if to object, then shrugged and waited briefly while Darrity fingered the harp. Then he touched his arm once more. "Come," he repeated.

The rest of it was like a dream. Darrity was led

through long winding lanes of crumbled buildings and the android never once spoke to him, even when he asked further questions. And all about the two walking figures swirled the cold mist, floating like wreaths of milk about the vast walls of buildings that, one day in the future, would almost certainly be discovered by Earth scientists and judged to be the remains of Ker-Palu-Rua, Stronghold of the Ancient Ones.

"This is the place," said the android, at last, stopping at a great, gloomy archway. "You have simply to walk inside and follow the light." He reached out and deftly removed the Earthman's blasters from their holsters. "Remember our reasons for doing this, Earthman," he said, quietly. "We must be objective, not emotional, in order to protect the interests of the Great Race and of your own people. But remember that we bear you no malice."

Darrity turned from him and walked into the gloom of the ruin, stepping slowly in the darkness and fingering the harp gingerly as he did so.

Ahead of him, a mere pin prick in the midnight gloom, was a tiny, distant light.

How far should he walk before striking the harp? How far *could* he walk before setting off whatever apparatus worked the trap? The questions thundered in his mind. His throat had dried like a piece of rough suede, and his whole body trembled. If he struck the string of the harp *now*, surely the android would hear it? But could he dare wait longer?

He took a dozen further steps, quickly, sweat running from him, not thinking of death or the harp or the androids or anything, but the simple physical act of putting one foot before another. And then he struck his fingers savagely against the string of the harp that was nearest to the crescent.

The darkness became full of thunder.

Hide, shrieked a voice deep within him. *Hide, or they'll discover you and think up something else. You've got enough food capsules in that pouch of yours to keep you alive for weeks if only you can find water somewhere.*

He ran into the darkness with the single thought of hiding from the android monsters filling his entire mind.

Hide! Hide!

He stumbled on a rock and toppled down, down, down into the vast velvet blackness of a pit.

That is the story of the Messenger expedition, from its beginning to its end. We may say that it ended with Darrity's fall into the deep pit within the ruin, because, though Darrity recovered consciousness and escaped, it was not really the *same* Darrity. Perhaps it was the long period of scrambling, blood-stained and half-raving, up out of the mud and slime and crumbled rock to the corridor within the ruin that really drove his reason from him. Or perhaps it was the many, many days he spent, afterwards, hiding within the ruin itself, keeping alive on food capsules and what water he could find in hollows on the rocky floor. Or, again, it might have been the fact that the androids were nowhere to be seen when at last he plucked up sufficient courage to emerge from the dark shelter of the ruin in which he had been lying unconscious and, later, in hiding for nearly a month, though he did not know that so much time had passed.

In point of fact, though, it was probably a combination of all these things that turned Darrity's mind, and probably the greatest single factor was the android's tale itself, with its frightening authenticity that, somehow, though there was no proof of it, seemed to be indisputable.

You can see Darrity today, almost any time, loitering in one of the swamp-edge towns, sleeping wherever he can, eating whatever is available and playing the crescent-shaped harp he still carries. But if you wish to buy him a drink in a tavern and get him to talk to you, there is one thing that you should never do. Never mention the Messenger expedition or the mountains beyond the Laykali river. For if you do he will leave you instantly, regardless of your bribes of money or further drinks; he will leave and go out into the open, and if you go after him you may see him standing somewhere, alone, his hands winging over the strings of his harp, playing a very strange tune.

And if you knew his story, as you do now, you would know why the music is so strange to the ear. It is the music of an alien world.

Possible Life Forms on other Planets

by *H. J. Campbell*

*SECOND IN A SERIES OF ARTICLES ON THIS TOPIC BEGUN
IN LAST MONTH'S ISSUE.*

Let us now go beyond the limits of elementary biology, beyond the realm of facts; not into fiction, exactly, but into the enchanted imagery of controlled imagination, logical speculation, scientific conjecture. Let us now deal with life as we do not know it, but as it might be.

The title of this series is Possible Life Forms on other Planets. Now what do we mean by possible? We mean that which is not impossible. And what do we mean by impossible forms of life?

It is easy to become metaphysical and rather obscure on this point. A number of quite meaningless books have dealt at length with profitless pseudo-arguments about this matter. Let us avoid these brackish backwaters of unintellectual sophistry and say at once that by possible life forms we mean systems that we would recognise as living, even though their physico-chemical bases differ from life as we know it.

If, on an alien planet, an object resembling a boulder should roll towards us and begin communicating ideas, we should not be unduly credulous if we tentatively assumed that the boulder was alive. If, later, we found that big boulders have little boulders, that they are sensitive to changes in the environment, that they grew and, in however odd a fashion, ate—if we found all these properties, we could with perfect scientific justification say that here was a form of life.

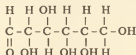
In order to predict or discuss such a form of life before we meet it, we must be able to hypothesise a workable physico-chemical basis—built on the assumption that natural laws are the same for all observers. Our hypotheses may be proved quite wrong, but it is the only scientific approach to possible life forms. And—it is not easy.

We find it difficult to visualise in precise terms any living system that is not founded on something similar to the carbon chains of terrestrial life. An objective appraisal of the existent knowledge of earthly life would convince most scientific minds that we know little of its fundamental

mechanisms and hardly anything at all of its destinal schematics. But we *do* have considerable evidence that indicates the dependence of biological reactions on the carbon chain. Such chains take the form:

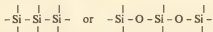


where R may be hydrogen or an organic radicle or even, in rare cases, an inorganic element or radicle. As a specific example we could cite the simple molecule of glucose, a rather important biological carbohydrate:

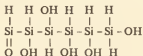


All carbohydrates, proteins and fats—compounds that constitute most of what we are made of when the water is removed (we are more than ninety per cent. water, by the way!)—are built of these carbon chains.

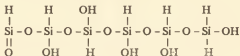
The only element whose chemical properties closely resemble those of carbon is silicon—and it has been postulated that somewhere in the wide universe there may be organisms in whose bodies silicon takes the place of carbon. The chains in such organisms may be of one or both of two types:



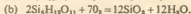
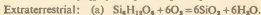
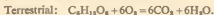
the first being based on the element itself, and the second on its compound with oxygen, silica—SiO₂. And their "glucose" might have either of the two formulæ:



or



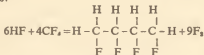
It might amuse the chemists among our readers to cogitate on the properties of such compounds. On a parallel with terrestrial metabolism, we could presume that oxidation of either of these two forms of "glucose" would produce silica and water, thus:



Another possibility that has been postulated is the addition of fluorine as a basic constituent of living things. On this system, although the basic chain link is still carbon, we find some interesting chemistry. The fundamental chain structure in such organisms would be:

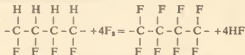


It has been suggested that plants of this constitution would absorb hydrofluoric acid (HF) as water from the soil, and carbon tetrafluoride (CF₄) as carbon dioxide from the air. The main reaction would then be something like this.

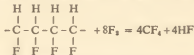


and free fluorine would be given off, as our plants give off oxygen.

The animals on such a planet would depend for the construction of their hard tissues on the reaction:



and they would obtain their internal energy from the reaction:



There we have a scientific postulation of life forms different from that with which we are familiar. Although many authors have propounded

these views and reactions, the main exponent of these ideas is Dr. John D. Clark, the very well-known and very open-minded American scientist who incorporated these concepts into an introduction he wrote to *The Petrified Planet*—a book containing three stories by different authors based on organisms functioning as discussed here. All those interested in possible life forms are recommended to read this book.

So far we have been dealing with the chemical bases of possible life forms, and it is not very profitable to go farther than we have gone in this direction. Indeed, some people will think we have gone too far already, and, admittedly, we are on the very borders of scientific speculation here.

But we can progress somewhat more by considering the physical side of our topic, and this we can best do by basing our discussion on energy relations.

But first, it may be well to point out the main difference, the *distinguishing* difference, between plants and animals, for it is with such distinction that we shall have to deal when considering the impact of physical factors.

Green plants are able to manufacture their own energy-supplying foods inside themselves. This they do mainly in their leaves, where carbon dioxide from the air and water from the soil are brought into proximity where sunlight can shine on them. Under the action of the sunlight, catalysed by the green pigment chlorophyll, the water and carbon dioxide combine to give sugars and other complex substances. These photosynthesised foods are either used at once or stored—potatoes and carrots are examples of such stores. But sooner or later, these compounds are turned into energy; either by the plant itself, or by an animal that eats the store.

For animals are quite unable to manufacture food in this way. They require their energy-sources to be ready-made, in the form of sugars, proteins, fats, etc. Similarly with non-green plants, such as fungi.

Next month we shall see that this difference between plants and animals enables us to predict a number of things about life on unknown worlds.

Aristotle

by JOHN CHRISTOPHER

Jones, the slave, came into the room warily, his eyes rovingly alert for booby traps. He bowed low towards the tapestried couch.

"Null-A" he said, formally. "Prince John, your royal father desires your presence at the hunt."

Prince John Reilly got up slowly and walked across the room to where Jones stood, bowed and waiting. He kicked him, but only twice and without any real enthusiasm.

He said: "Get my suit."

He stood looking out over the balcony of his room into the central courtyard. Directly below his window were the livestock enclosures, a huddle of cows and sheep and sorry-looking hens pecking in the hot dust. Beyond them, in the centre of the courtyard, squatted the low, square building that had so lately been his home. The women's quarters. As he watched he saw the woman who had been his mother

come out of the main door and scurry across towards the sheepfold. She looked up towards his window but dropped her head as he continued to gaze impassively outwards. He let his eyes rest on the jutting harshness of architecture that surrounded him. Had the word held any meaning for him he might have thought it ugly. As it was he was content to appraise the functional strength of the palace's design.

Jones held the heavy tank suit up for him and he stepped into it and permitted himself to be zipped up to the open vizor. As he had done many times before in the past two days, he walked stiffly over to the long wall mirror and examined himself with satisfaction. Then, cuffing the slave, Jones, out of his way, he walked out of the room and took the lift to the basement.

The tanks of the Princes, as was customary, were drawn up in a defensive ring about



the larger tank that belonged to their father, King Patrick Reilly. There were six now: a good circle. Two outriders, two flankers, and Prince Jake's tank and his own as rear-guards. He walked across, treasuring his pride in it and in the gold-banded shamrock which was its insignia. The mechanic stood back and bowed.

"Null-A. All O.K., Prince John."

He replied: "Null-A," and climbed up and into the turret.

He had a sick feeling of anticipation at the thought of the hunt and an urgent desire to examine the controls again. But to display any kind of excitement would be shameful. He stood erect in the turret, and watched his brothers arrive. Patrick, the eldest, walked across to the left-hand outrider, his face cold but looking strangely nervous. Bernard took the other lead tank and Hank and Norman the two flankers. Jake, walking across to the second rear-guard, paused by John's tank. It was only six months since they had played together in the women's quarters, but that was part of a different and forgotten life.

Jake said: "Don't get excited, kid."

John looked evenly at his brother's sneering face. He recognised the fundamental weakness that lay behind his present arrogance, and despised it. Six months ago, in the women's quarters, he, although the younger, had been the unquestioned leader. It would take a very short time, he knew, to regain that superiority, and with that certainty in mind he was content to accept his brother's patronage without resentment. He despised Jake, the weakling. The translation of his contempt into action could wait.

He said: "Where are we hunting today?"

Jake looked up. "The Hawkins. Pop wants to take their palace and install Patrick as king. We're putting everything into it. We'll have over thirty tanks out altogether."

John glanced over again to where Patrick stood, tall and silent, in the turret of his tank. He looked down to see Jake's face conspiratorial and sly.

"If we don't manage to take the Hawkins' palace," Jake said, ". . . something may

happen. Pop wants to get rid of him. I think he's scared."

Jake left to scurry into his own tank as the King himself strode in, his muscle men behind him. The Princes saluted their father. John, watching him acutely, saw his nervous look towards his eldest son and the calm contempt with which it was received. There would be a change all right. There wasn't much hope that they would capture the Hawkins' palace... and the failure might well spark and blow up. There would be a new King Patrick very soon. When I am King John, he thought suddenly, I shall make sure none survives to be strong enough to threaten me. He had no doubts at all that he would be a king eventually.

The lights flickered and died at this point and the whole gigantic tank garage was suddenly lit by the eerie illumination of the mechanics' torches. Trouble with the generators again; probably the oil. Lately the faults had become increasingly numerous; despite having the chief electrician ceremoniously scourged to death the previous month there had been no improvement. In the darkness Prince

John reflected that it would be wiser to scourge all the electricians, but not to the point of death. After all, they were useful.

The lights came up. Ahead of them the great steel doors swung open revealing daylight. At the King's signal all the tank engines began to roar. The troop started to move, in close formation, up the ramp to the outside world. At the age of sixteen, excited, tense and confident, Prince John proceeded for the first time beyond the palace walls.

At first he was concerned for the most part with controlling his tank and keeping it in formation with the rest. The tanks of the soldiers, smaller again and less efficient than those of the princes, split into two wings about the royal centre. John counted thirteen on the left and twelve on the right. One of the latter came to a sputtering halt less than twenty yards from the palace and another tank moved over from the left to balance its absence. The troop moved in its own dust cloud down through the valley to the east.

King Patrick's strategy was cunning and simple. He had no fantastic ideas of making a frontal assault; all the power

of this warring age was epitomised in the formidable, sprawling palaces—citadels whose combination-locked gates were impregnable to all marauders. To conquer a palace you must hold the king. To capture the king you must lure him from his stronghold. So now King Patrick studied the ground and made his plans. The Hawkins' palace squatted at the head of a blind-alley valley that opened out into the great plain, the hill rising high behind it. From it the lookout could see all the way down to the far horizon. In the late afternoon sunlight he saw the small convoy—two royal tanks with an escort of six—crossing his field of vision beyond the shoulders of the sloping hills. Within a quarter of an hour the eighteen tanks of King Louie Hawkins' entourage were in hot pursuit after them.

The ambush succeeded in part. King Louie's retreat into his own valley was quickly sealed off, but the desperation of his predicament drove him and his troop right through the decoying eight who stood to hold him. As the action developed into a running fight and he saw his own shells dropping short of the fleeing

enemy, John also saw, away on the left, the burning hulk of Bernard's tank. He integrated this new factor into the logical reality of his environment. One less between himself and his inevitable triumph.

This, his first battle, produced in him no fear, but instead a reassurance of his confidence and strength. The running fight went on for over an hour. The pursuers lost six soldiers' tanks—two hit and four halted by mechanical defects. The pursued lost eight, but the royal tanks of King Louie and his two sons still held their lead beyond accurate shelling range. At last, as the long red streaks began to darken in the western sky, they turned into a valley and the pursuers saw, with rising excitement, that this also was a blind alley, ending in a craggy gradient impossible to traverse.

Their rashness cost them dearly. Four tanks were knocked out by the halted defenders before the rest made for dead ground and began the long, attritional shelling match. It was dark before they moved in for the kill. The huddled shapes of the shattered tanks were lit up by the flames leaping from one that

still burned. King Patrick Reilly switched the searchlight of his own tank on. Into its glare three figures advanced, dazed and uncertain. John, recognising them as ordinary soldiers, knew what had happened. King Louie and his sons, abandoning their tanks, had got away on foot over the hills.

King Patrick disposed of his captives decisively, but his decisiveness, his youngest son realised, contemptuously, was the decisiveness of horrible, crawling fear. He looked at the silent, watchful figure of Patrick, his brother, and smiled with the thought that the change would not now be long delayed.

King Patrick said: "You palookas protected him while he got away. That wasn't very clever of you. It wasn't Null-A. He threatened you, did he? But I'm the one who carries threats out. Hank! Joe! Tie them across my tank. There's a whipping party."

Prince John watched with only slight interest while the prisoners were flogged to death. He was thinking of more serious things. The new King Patrick. He, too, might see the wisdom of protecting himself against usurpers. There

was danger there that would need circumventing. He thought, with careful Null-A logic. But the idea that eventually captured his mind with its brilliance came like a dazzling gift. He planned events, as the screams died away into choked silence. They would not miss him now in the dark. When they started back for home he could slip away, cut through the valleys between this and the Hawkins' palace . . . There was a chance of catching them; remote, perhaps, but real enough. And if he did . . . The combination forced from the captured Louie, the palace taken and he, at sixteen, King John, an undisputed monarch.

His speculations began to drift into reveries and he checked them sharply. Engines were revving up for the luckless homeward trek. Thought now became action, to be realised, to be integrated. He started his own engine and the troop began to roll down the valley, towards the plain.

He got away easily enough, and heard the noise of the others pass away into the night. Then he switched his headlights on again and began his hunt.

He hunted with a fierce and

realistic logic, ruthlessly exploring the network of valleys that lay between the scene of King Louie's last stand and his distant palace. Sometimes he halted, waiting for half an hour or more before swinging his probing searchlight along the valley floor and up the dark hills that lay about him. Early Null-A training had left him with no fear of darkness. He accepted night, knowing he could not change it, and refusing to equate a temporary limitation of sensory perceptions with the possibility of hidden and threatening powers. The darkness was useful to him in many ways, and he accepted its usefulness.

But the search yielded no results. Time and again the beam of his searchlight flashed across immobile emptiness, or paralysed a hare or fox. There was no sign of Louie and his sons. He had almost decided to call it off when he remembered the city.

He had been well trained in local geography, and he was surprised that he should not have thought before of this, a logical refuge for hunted men. It rested in the plain on the other side of the long spur of hills and his tank map showed that the next valley should

lead him out right into its outskirts. He set his tank roaring forward again, hopeful that his supposition would be correct. If Louie, too, had considered the possibilities of a search along the valleys that divided him from his palace, what was more likely than that he should make for the sprawling shelter of the city? He drove on, in greater confidence.

When his tank rolled down through the valley into the plain, the moon had risen above the distant horizon, and in its light the city lay before him, white and silent and incredibly defenceless. Although he had read descriptions of these cities, the realities surprised him into amused contempt. The city's defencelessness was so absolute. There was no gate, no barrier, not even the rudiments of a wall. It stretched out in the moonlight, untidy and chaotic, and obviously unplanned. Roads wound through it haphazardly. This was the past, the illogical, sentimental, Aristotelian past. And the past was dead and deserted.

The dust of the sleeping years kicked up in the moonlight, and animals scurried away into side streets as his tank clattered along the crum-

bling highway. With Null-A clarity he wasted no time in fruitless exploration of this maze, but drove instead to the first high building and climbed its dusty, ruined stairs to secure a lookout. His gaze ranged carefully over the weathered ruins of the city's buildings. At last he saw what he was seeking, in towards the centre. The flicker of flame—a fire. He descended quickly and paused for a moment beside his tank. In it his power would be crushing against unarmed men, but against that the noise of his approach could not fail to warn them. He took out a light machine-gun and slung its strap over his shoulders before locking the tank again. Then, holding his portable compass, he set off towards the direction of the fire.

Around him towered the forgotten relics of the past, lifting their weathered towers into the night. They evoked for his Null-A mind no mystery; mystery, after all, was a function of non-integration and, therefore, to be despised. He merely tightened his grip on the machine-gun. A man of an earlier age might have felt awe at the sight, as he advanced warily through a nar-

row alleyway, of the primitive fire burning in the centre of the deserted and forgotten square, with two figures hunched blackly beside it. Prince John felt only contempt for this flagrant disregard of the laws of self-protection. He advanced more rapidly, his machine-gun at the ready. He called, his voice loud against the low crackle of the fire and the brooding silence of the night: "All right! Turn round, you two. Hands high."

They looked round without any show of surprise, and leisurely got to their feet. He saw at once, with quick disappointment, that they were not the men he sought. They did not wear tank suits, nor any of the trappings of royalty, but a loose, robe-like dress. His mind ran swiftly. At the very least, two new slaves to take back with him to the palace. He said sharply: "Who are you? What the hell are you up to?"

The taller of the two men glanced down at his companion. He spoke in a cold but flexible voice: "He's only a boy, Joseph."

John said, without pride, simply stating the fact: "I am a prince. My questions must be answered. Who are you, and

what are you doing in the city?"

The shorter of the two strangers, bearing a fair-sized paunch in front of him, said easily: "So you're a prince, are you? My name's McIlwain—Joseph McIlwain—and this is Peter Sheppard. What are we doing in the city? Looking for books. That's all. Just looking for books."

Prince John said, flatly: "You're crazy. I claim you as slaves by right of conquest. It wasn't very Null-A of you to sit alongside an open fire in the middle of a square like this, was it? Ready to start moving?"

"Wasn't it?" Joseph McIlwain said. "We're not entirely unprotected. And then, of course, we don't recognise Null-A."

The words did not make sense. It was as though a man said: "I do not recognise the sun." It was a syntactical error; clearly the meaning was that they had not had Null-A training. They were slaves, then, escaped from some near-by palace.

He said: "So you are slaves!"

Peter Sheppard's long figure

leaned forward, as though to look behind him at something in the shadows at his back. His cold, clear voice said: "You will have to hit him, Mark. I think he's an obstinate youngster."

He moved his machine-gun to point more directly at them, contemptuous of this amateurish attempt to distract his attention.

"I'm not fooled that way," he said. "Stay where you are."

The shock of astonishment was greater, in a way, than the shock of the blow that landed just behind his ear, propelling him forward, on buckling knees, into the circle of fire-light. And the vague, accompanying words from the lips of Joseph McIlwain: "No, we're not slaves. We are Aristotelians."

It was like being in a moving tank, but strangely different. There was the heavy roar of engines—a heavier, more sonorous roar—and occasional jerks and drops, but the whole thing was too smooth, and the more he listened to the sounds the more clearly he realised that this was no tank. It was too large for one thing. Rubbing his sore head he

looked about him and judged the chamber in which he was held to be about fifteen feet long, cylindrically shaped with a cross-section of five or six feet. And there was no sign of the driver who must, therefore, be in another part of the machine. Pain savaged his head, and he cursed his own folly again. But it was futile to waste time on self-recrimination. He realised with surprise that he was unbound. He got to his feet, balancing himself unsteadily against a vague swaying motion. There was a kind of window away to his left. He walked over and craned his neck to peer out.

He saw the moon first, a full rich orb of silver. And from the moon he glanced down to see moonlight gleaming on fleecy clouds—clouds billowing richly *beneath* the window from which he gazed. The awareness was like a flaming brand through the hanging webs of his brain, burning, searing, destroying. He held himself in rigidly for a moment, but then it was possible to repress his screams no longer and they echoed, like the howlings of a frightened animal, through the

narrow fuselage of the aeroplane.

A small door opened and Joseph McIlwain and Peter Sheppard ran towards him along the narrow compartment. They gripped his arms and forced him down into a seat.

Joseph McIlwain said: "You're all right. You realise that, don't you? You're quite all right."

"It's an aeroplane," he moaned.

"Be Null-A," the taller man said, sardonically. "Integrate it. You're in an aeroplane and you are quite safe."

Integrate, yes, but how integrate something against which all his consciousness rebelled? There had been aeroplanes, he knew, in the past, but they had driven men mad in the high element of the air. And yet . . . he felt all right. He braced himself, recovering his confidence.

Joseph McIlwain said: "You had heard of aeroplanes, surely?"

He said, uncertainly: "There were aeroplanes—towards the end of the ages of confusion. I know that. It makes men mad to endure the high altitude . . . at least . . ."

Peter Sheppard said: "He'll be all right now, Joe. Shall I leave him with you? I'll go up front to check with Mark."

The other nodded at him and he left. Joseph McIlwain came over and sat on the seat beside his. He said: "Do you know what Aristotelians are?"

Prince John said: "They were . . . in the ages of confusion. Men were Aristotelians then. It was before Null-A. They believed all sorts of crazy things—religions and things. They were thalamics. They had all sorts of contradictory impressions in their minds at the same time, because they didn't understand Null-A integration."

McIlwain smiled. "That's a pretty clear picture. Primarily they believed in the good, the beautiful and the true. That's not Null-A, is it?"

"Well," Prince John pointed out, reasonably, "they are relative, aren't they? The good is what is good for me; the true is what I hold to be true. Beauty? That's not important, is it? And no two eyes see alike."

"Yes," McIlwain repeated, "the good is what is good for you. Every man's hand is against you and the weakest

go to the wall. But that's hardly non-Aristotelian; pre-Aristotelian would be a better term. Three thousand years ago much the same sentiments were held."

"Three thousand years ago," Prince John echoed, contemptuously. "Aristotelians always dwelt in the past. That's because they were thalamics; cortex undeveloped, thalamus overdeveloped."

"They have taught you thoroughly," McIlwain said. He paused. "We are Aristotelians, John. As I told you last night, we were looking for certain books in that city where you found us. We had come on a long journey, and now we are returning. We had to decide what to do with you. There was some argument, since Aristotelians do not generally find their lines of action quite so clear-cut as non-Aristotelians do. Finally, we decided to bring you with us. You are very young, and that gives us hope that it may be possible to salvage you. We are taking you home with us."

The use of the womanish word "home" disgusted him. He said, cautiously: "Home? Where?"

"On another continent.

Come and look from the window."

McIlwain led him firmly to the side and pointed outwards. Through a gap in the bubbling clouds Prince John saw the wide, glittering sweep of the ocean. A new fear swept over him, and he clutched the man beside him for support. The Aristotelian said: "Another shock for you, I'm afraid. You see, John, there is only one way that the human mind can make itself impregnable to shock, and that is by limiting its experience. That's where the Null-A philosophers made their great mistake. It was understandable, really. They came in the wake of a century of tremendous technological and scientific advances. Scientists were explaining the 'how' of things so fast that it was very easy to overlook the fact that, by the very nature of their work, they could not even postulate a 'why.' And, of course, the 'whys' are the fundamentals; the 'whys' provide the permanent mental shocks which the mind of man must undergo. Without them it atrophies."

Prince John said: "But Aristotelianism makes unwarranted assumptions—that's explained in the Ab-

stracts. It's not empirical."

"Does that damn it?" McIlwain asked, "—not being empirical? A philosopher called Ouspensky pointed out once that empirical science rests on two fundamental postulates—matter and motion, and each has to be defined in terms of the other. Matter is that in which motion occurs; motion is a change in matter. The empirical can only deal in sensory perceptions."

"What other perceptions are there?" Prince John asked.

McIlwain laughed. "For you, probably none. I imagine that you are a proper Null-A savage. But back home we have one or two things we've salvaged from the wreckage of the cities. A few paintings by Rembrandt, Turner, El Greco . . . Some books of poetry. And an old gramophone on which we can play a record of Beethoven's last quartet. You will have to take it from me that the experience of seeing and hearing those things transcends ordinary sensory perception. But you can't measure it, of course."

Prince John said: "But that old world passed away. Isn't

that proof that it was inferior?"

"Null-A logic," McIlwain replied. "There's nothing that says the best man will win. Even in your brutal world accidents can happen."

"The winner wins," Prince John said, flatly.

"Yes," McIlwain agreed, "and Null-A won—for the time being, anyway. And there were a lot of good reasons for it. Three wars within thirty-five years—colossal, planet-shaking wars, quite unlike the little piffling warfare that in your world goes on the whole time. It must have been hard for anyone to continue to believe in absolute and objective goodness in the face of all that. The last one—the one in which atomic bombs were used—was the turning point. It never ended; it simply died away into the permanent squabbles of petty chieftains. The highly complex weapons gave way to the more primitive artillery and hand weapons—naturally enough, since you need a co-ordinated and stable society to produce atomic bombs. And aeroplanes went, too, when the new feudalism made slaves of mechanics and thereby reduced their efficiency below the danger level. Were

the mechanics efficient in your palace?"

Prince John shook his head. "No. We scourged them regularly, but they were never very good."

Joseph McIlwain laughed. "Fancy that! Well, there it was. All over the world the little bullies, released from any kind of moral censorship by the painstaking non-Aristotelian philosophers of the first half of the twentieth century, formed their little gangs and built their palaces and set up dynasties. Man, you might say, had depended on his reason, and his reason had led him back to the jungle. It may have been necessary. It may be that fallow periods are as useful as the years of harvest."

Prince John said: "But if not reason, what can one depend on?"

McIlwain sighed: "Null-A again. 'If not, what . . .?' The old error; the assumption that the universe, that infinity can be made understandable to finite and earth-bound man. Why should it be? And why should there be any one faculty by which man must live? Reason, yes. It's a useful instrument, and should be used. There's emotion, too.

There are two attributes of knowledge for you. There's a third, too, which Aristotelians regard as the only real knowledge. Transcendental knowledge. No scientific instrument that ever has been, or ever will be, invented can measure it. But it's real enough. The artist and the mystic know how real it is."

Prince John said, slowly: "You want me to give up a world of clear-cut blacks and whites for this contradictory world, where there are no answers to anything—no real answers?"

McIlwain said: "You live in a universe that is, ultimately, infinite. You are a finite mind. If you want final answers you must limit your questions. Contradictory? Why shouldn't the ultimate truth about the universe be what we would call contradictory?"

He was able to watch, without fear or any emotional disturbance, as the ground flung upwards to meet the descending plane. Mark brought it in to a good landing. They stepped out onto an airstrip that gave signs of having only recently been reclaimed from the wilderness that reached clutching fingers

to its very edge. There were mountains in the distance and the sky was blue; nearer, long avenues of olives were alternately green and silver-grey in a capricious breeze. Prince John turned with the others to look at the people who came to meet them. They were all dressed in brightly coloured clothes, and he saw with astonishment that women and children mixed with the men, unafraid and unreprieved. But their faces astonished him most—all of them transfigured with a happiness and contentment that was new to him.

One of the men called: "Did you get them, Peter?"

Peter Sheppard flourished a small case in his right hand.

"Yes. They were intact. We shall have to send along a proper expedition. That library's hardly been touched."

Prince John said to McIlwain: "What books were you looking for?"

"Libraries suffered badly," McIlwain explained. "Especially here in what was Europe. The city where we found you was an American one that was reported to have missed the bombing, and yet had a good-sized library. Tomorrow

we have the celebration of dedication of our citadel. And we have all the works of Aristotle now that survived the earlier Dark Ages."

He questioned no more at the time. It would have been difficult anyway in the press of people; the good-natured interchange of conversation swept him up, still dazed and unsure, for the rest of the afternoon and evening. There was a feast—a special one, McIlwain explained, for the eve of the dedication—and the strange, exotic foods were another revelation after the plain fare of his father's palace. He drank wine cautiously, and listened, half-attentively, when Peter Shepard stood up at the side of the long table in the enormous banquetting room.

"My friends," he said. "Tomorrow we name our city. This shall be our fortress, and the focus from which the knowledge of man's dignity and man's humility shall spread out again, as it did once before from this same land. We are on the offensive now; we shall not look back."

He was muzzy from the wine when the three who had brought him to this place took him with them to the room

they had been given for the night. They each had a pallet bed; the window was open to the night breeze and the great, distant stars, flushed against purple. He watched them, lying awake, thinking. The aeroplane. It represented power. Psychological power as well as real power. No palace could stand against him wielding that weapon. And he had watched carefully the way Mark had driven it; there were risks but the rewards were greater. To fly back, subdue his father's palace, and the Hawkins', and all the other palaces of the continent. Power would breed power; strength would generate strength. He had learned much, and he would use what he learned. Goodness? There was power, and power was real and visible!

Emperor, he thought—and why not? Emperor of the Americas. A few years. Eventually—Emperor of the World. Granted the initial crushing supremacy that the aeroplane would give him, it wasn't impossible. By the time these people could do anything the seed of his greatness would be germinating.

He glanced towards the evenly breathing figures beside

him in the room. Vague starlight filtered in. They were sleeping all right. They had not troubled to search him. He felt along his leg for the hidden sheath, and the knife. He withdrew it, cautiously, and cautiously slipped out of bed. McIlwain first—his bed was the nearest of the three. Then the other two, for safety, and so out and down through the night to the aeroplane and escape and the dazzling future. He trod, carefully, as he had been taught, along the space between the two beds.

Poised beside McIlwain, he considered, the knife naked in his hand. He knew where to strike so that not even a sigh escaped the stricken body. One thrust and it would be over. There was nothing unusual about it. Less than a month ago his father had killed two slaves when he found them asleep outside his apartment. There was no reason for him to hesitate. It was quite Null-A.

But still he hesitated.

Goodness? The thought drifted back into his mind, as though in its casual implantation it had taken root. To be with these men, to be a friend and equal amongst friends and equals—or to be

Prince John, King John, World Emperor John. The temptation was almost overwhelming. And yet . . . He clutched the knife more tightly, and his gaze went out to the stars, brilliantly glowing in this alien night. In a sudden, intense surge of agony he called soundlessly for some help, some guidance in a confused and incomprehensible universe. And with that call, unanswered, unexplained, his hand holding the knife dropped wearily to his side, and he stepped back from the bed of the man he had been ready to murder.

Peter Sheppard's voice came from the shadowy third bed by the door: "All right, Joe. You can stop snoring now. You were right; but it was in the balance for a while."

A light switched on and, dazzled, he was still able to see Peter Sheppard's long figure clutching a gun as he lay on his bed. John began to speak in confusion, but McIlwain, sitting up, silenced him.

"That's all right, John. I was in no danger. Peter has eyes like a cat. We had to test you this way. It will be all right now."

He began to laugh weakly, the first time in his life he had laughed at something other than the discomfiture of another creature.

"I was going to steal the plane," he gasped. "It seems so silly. And bean Emperor..."

"You can be a man instead," McIlwain said. "It's a lot more fun."

All the morning there had been rejoicing; this new wonderful thing which was called music, and singing and dancing, and friendly talk. Now, as the sun rose high above them in the blue sky of

Greece, the noise hushed into silence. The city lay about them, hastily constructed for the most part, and unwallled. Here, at its heart, was the only large building as yet—the Library and Amphitheatre. Here at the top of the dazzling white steps in front of the building an old withered man, with a straggling beard, but a face lined with wisdom and happiness, received from a red-robed girl a flame kindled in a bowl. He raised it high towards them.

"With the symbol of this flame," he cried, "we dedicate and name our city. We name it—ARISTOTLE."

TOMORROW IS ANOTHER DAY

by K. Houston Brunner

Is the title of next month's long novel. Supporting shorts are *Stand-In* by Jonathan Burke, *Errand of Mercy* by William F. Temple, *The Lava Seas Tunnel* by F. G. Rayer and E. R. James. American author, Richard Wilson, also gives us an original story called *Mary Hell's*.

AUTHENTIC—A MONTHLY MUST



(10) NEPTUNE

Mass, 17.2 of Earth's. Distance from Sun, 2,793.5 million miles. Year, 164.79 years. Day, 15 hrs. 40 mins. Orbital velocity, 3.4 miles per second. Escape velocity, 14.0 miles per second. Gravity, 1.12 times Earth's. Diameter, 31,000 miles. Density, 1.58 times water. Albedo, 52%. Eccentricity, $1^{\circ}46'37''$.

The discovery of Neptune is a splendid example of what can be done with mathematics. In the days when Neptune was unknown, astronomers were puzzled by a variation in the velocity of Uranus before and after 1822. Adams in England and Leverrier in France wondered if another planet might be the cause, and they independently calculated where such a planet ought to be. Galle at the Berlin Observatory, in 1846, turned his telescope on the spot indicated by the mathematicians' calculations—and there was Neptune.

It was realised then that before 1822, Neptune had been in front of Uranus and accelerating it, and that after 1822—when the two planets were in line with the Sun—Neptune was behind Uranus and retarding it.

Neptune appears to be very similar to Uranus in size, density and volume. It receives only $1/900$ as much heat from the Sun as does Earth and therefore probably has a mean temperature of -222°C . Thus there is hardly any difference between seasons on Neptune. At Neptune's distance, our Sun would not appear as a disc, but as a point; it would look like the star that it is.

Only one satellite, Triton, orbits Neptune, and it does so in a retrograde direction. The astronomer Lyttleton has put forward an interesting theory to account for this—and for the existence of Pluto as a planet. Lyttleton points out that Triton and Pluto are of much the same size, and that Pluto comes within the orbit of Neptune at perihelion. At such times the two bodies could become so close that both might become moons of Neptune, revolving normally. And this phenomenon can work both ways. It is possible that both Pluto and Triton were once satellites of Neptune and that they came very close in such a manner that Triton's direction of rotation was reversed and Pluto was shot away to become a planet in its own right.

Sometimes security can
be too secure!

TOP SECRET

by William S. Kals

The driver deposited Rusty Lane at the railroad station and said: "Good luck, Mr. Lane." He turned the car around and disappeared in a cloud of dust.

That "Mister" sounded good to Rusty after three years, eight months and four days.

His own clothes felt unfamiliar after all this time. They were clean and neatly pressed. Rusty noted with satisfaction that they didn't even smell of mothballs. Yet they had been put away as long as Rusty himself—five to fifteen years.

In his pocket he had twenty crisp new dollar bills, the address of the Acme Sheet Metal Works—his employers as of tomorrow—and a slip for the parole officer. In his head he carried three other useful addresses, picked up in the last three years, eight months and four days.

The train clanked to a halt and Rusty climbed aboard. The first compartment was

empty but for one man. Travelling salesman Rusty figured. Probably talk a blue streak. But outside talk would sound good for a change. The train lurched over the only points of the station and picked up speed.

The man Rusty had taken for a travelling salesman began to talk.

"That makes three in two weeks," the Superintendent said. "And just before the State Legislature is to approve the funds for the new wing. This Allan Todd—what sort of a case was he?"

"Big hunk of a man, sir. Machinist by trade. Went berserk in a tavern. Court-committed. Been here eighteen months. Walled-in type. Unco-operative in analysis. We had little trouble with him until four months ago. Attacked a lathe. Damage, \$72.84. Struck two orderlies but no inmates. Nothing since."



The Superintendent growled: "Nothing, except he vanished just like the other two. Any suspicious cars around at the time?"

"Well, sir, it was visiting hour. There were quite a few..."

"And you didn't miss him until supper?"

"That's right, sir. We notified the police. They're checking the usual leads. Relatives, former employer, friends..."

"Let's hope they find Todd before the papers get it."

"Take off your coat, tie clip and suspenders. Fill in this form. Then go into the next room, please," the nurse in the chest x-ray trailer said.

The bored voice read from his card: "Martin. Dr. Ernest. Physics Department."

"Number four-two-six. Inhale, please." The technician adjusted a sliding screen.

Guillotine, Dr. Martin thought. To cut off my career if the x-ray's positive. And the red spots on the cheeks of his lean, pale face grew a little darker.

"Hold your breath now until I tell you." The automatic timer clicked, whirled for three seconds, clicked off.

"Thank you. You'll be

notified through the mail. Next!"

"There is a suspicious one, Hilde. Haven't seen this wording before, I don't think." The man pointed to an ad in the personal column and Hilde read:

DOES WORRY INTERFERE with your work? If worry hampers your every step, bla, bla, bla.

"Write to that box number, Hilde, on plain paper. Give your own address. Make it sound as if you had real troubles. We'll see what they have to peddle and who they are. Same old bunch, probably. With a new pitch. If it so much as smells of fraud they'll get a surprise."

"Yes, sir," said Hilde, fusing with her notebook.

"Next week you'll begin looking over the ads yourself. There's a trick to spot them, but you'll catch on quick. And don't forget—if they don't ask you to *write* they aren't using the mails; we aren't interested. By the way, how'd the boss find *you*?"

"Why, I wrote to a box number."

The man laughed. "That's good. Real good!"

"And how long did you say your husband's been missing, Mrs.—er—Novotny?"

"Since last night?"

"He left work as usual but didn't get home. That right? And he's not at work today?"

"What's he do for a living?"

"Tool and die maker, huh?"

"Did you—er—did you have any kind of an argument with him before he left yesterday morning?"

"And he doesn't drink much, huh?"

"Ever stay away a night before?"

"Well, don't worry, lady. We'll check all around. If you don't hear from us by tonight, drop in tomorrow and bring a recent photograph. He's probably all right."

"Yes, lady, I'll let you know right away . . . just as soon as . . ."

Jack Engler pushed away the parallel arms of the drafting machine. It was only two thirty in the afternoon but he felt he had done enough for the lousy salary they paid him. He opened the *Journal of Electrical Engineering*, which had arrived that morning.

His concentration was disturbed by a big, black fly

dive-bombing in front of him. On the third dive he disposed of the pest with a smart back-hand swipe of his slide-rule. Then he cleaned up the slide-rule on the company towel and went back to his *Journal*.

The articles bored him. He flipped pages until he came to the Situations Vacant columns. Defence Project . . . Government Laboratory . . . Aircraft Factory . . .

Always the same, he thought, bitterly. Just because he'd joined some silly front organisation ten years ago, he had to design limit switches for slot machines, instead of doing an engineer's job. Damn the F.B.I.!

Then he saw the ad which seemed to be just written for him:

U.S. Citizenship not required . . .

The grey Dodge coupé stopped in front of the *Gazette's* dusty offices.

Burke, editor, advertising salesman and make-up man, watched the passenger alight, pick up his brief-case and put a nickel in the slot on the parking meter. When he saw the stranger head for the *Gazette* door he figured

here came another Government nuisance, What this time? Internal Revenue? Social Security? Statistics?

"Mr. Burke?" the stranger enquired.

"Yeah," Burke grumbled. He made it tell a whole story. Every man, woman and child within a hundred miles knew his name was Burke. "What of it?"

The stranger looked around the office. "Could I speak to you alone for a few minutes?"

There was no one in the office at the time. Burke seemed as if he would point out this fact to the stranger. But he jerked his pipe stem towards a door marked PRIVATE and followed the stranger into the cluttered little office.

"Mr. Burke, I have a piece of news for you which we want you *not* to print."

Burke looked back evenly. "Keep it to yourself then. I get the news in this county myself. I make my living printing that news. What a paper does, you know."

The visitor smiled—the smile of a salesman who has just been told not to bother to unpack his samples. He was all civility when he spoke. "Mr. Burke, let me explain.

Some buildings are going up in the near future some ten miles from here. We need your co-operation."

"You expect that no one will notice these buildings?"

The stranger unbent a little, became human. "Oh sure. Local contractor's doing the work. He'll use local help if he can find it."

"Good." Burke grinned a little.

"It's the purpose of these buildings which I can't reveal to you and which you'll find hard to find out yourself, we hope. We want your co-operation in writing an editorial. I have here a few drafts which will give you an idea."

Burke picked up the offered sheets, glanced through them and returned them.

"You are welcome to use any of these," the visitor said.

"No thanks. I got the drift. I can still write my own editorials." He swivelled around in his chair, rammed a piece of yellow copy paper into the antique typewriter and clattered:

DON'T STOP, DON'T LOOK,
DON'T LISTEN! *When you see
the soil broken for a new
plant, the foundations poured
for a defence project, these*

days, don't stop—look the other way . . .

"That's excellent. Thank you, Mr. Burke. I don't want to waste any more of your time."

When Burke was quite sure his visitor had left town he slammed his old felt hat on his head, locked the door of the *Gazette* and walked across the street to interrogate his old time friend, Mike—the only contractor in the town.

Dr. Ernest Martin had never felt so good. He was speeding through the warm winter desert to a new job. It was a lucky break that the offer had come the same day as his notice to return to the x-ray place for a re-check. A research job; no teaching. The man had only smiled non-committally when Martin had asked him what sort of research. Martin understood. He knew the hush-hush-smile of old and did not ask any more.

The car stopped in front of the NO VACANCY sign of the BLUE SPRINGS MOTEL. The driver deposited Dr. Martin's bags. The girl in blue jeans and sports shirt who had been sprinkling the lush flower beds around the swimming pool

dropped the hose and greeted the new guest: "You must be Dr. Martin."

"Yes, indeed."

"You are in number five, with Mr. Engler, a very nice gentleman. Here is your key. Let me know if there's anything you need. Dinner's at seven in the big building over there. Can you manage with your bags?"

"Oh yes, thank you."

Dr. Martin carried his two light suitcases and the portable typewriter along the flagged walk around the swimming pool to number five. The cabin consisted of two bedrooms, each with its own shower, and a central sitting room. Martin unpacked in the unoccupied bedroom and put out his toilet things. Then he took his typewriter and his few books over to the main room. He picked the corner opposite the drafting table for his own desk.

"Dear Fred,

"As you told me to, I'm making this look like a personal letter and sending it to your home address. But it seems funny, somehow, to write to a Postal Inspector on blue linen paper and call him by his first name after working

with him for only ten days. So far nothing suspicious to report.

"I have only been here two days, but I think the boss's hunch was wrong: it's an engineering job. There has been no mail coming in or going out that I could see.

"The place is wonderful, but my work is very dull. Today I spent a whole day figuring out Air-Express schedules and how long a parcel would take to reach every large city in the U.S.A. and even allowing for the time from the airport to the City's centre.

"I'll try to get a lift into town (ten miles from here) tomorrow to mail this letter.

"I'll write again when I have some news.

Hilde.

"P.S.—The swimming pool is wonderful."

Engler burst into the cabin.

"I'm sorry. Nobody told me you had arrived, Dr. Martin."

They shook hands.

"And forget the 'doctor'; it's Ernie."

"I'm Jack."

"When do we start work, Jack?"

"Right now if you like, Ernie," Engler said and produced a long, brown envelope

addressed to Dr. Ernest Martin and Mr. Jack Engler. It contained a single sheet of thin, white paper, foolscap size:

*Project 739 / DrEM—JE/
Ass 1*

Wanted: compact design of noiseless, accurate (plus, minus three minutes per 24 hours) mechanism to trigger electrical or mechanical action any time within three to forty-eight hours. Must be unaffected by temperature changes between -20°C . and $+50^{\circ}\text{C}$. and normal flying conditions, including handling at loading and discharging terminals.

"That shouldn't be too difficult. Of course, clock-works are out because of noise," said Engler.

"The way I see it they want some sort of a time-fuse, which . . ."

"How about some chemical reaction?" Engler broke in.

"No. It'd be hard to find a reaction unaffected by such a wide temperature range."

"Batteries are out—they'd drop off too much in forty-eight hours," said the engineer.

"You have something there though," said Martin. "Let a battery supply a mono-

chromatic beam, which falls on a metal, liberates electrons. They'd be unaffected by the strength of the beam . . ."

"Oh, you mean an Einstein effect?"

"Say, Jack, I've got it. And very elegant too. What process do you know which is not affected by temperature, pressure . . .?"

"Radioactive decay?"

"Right, Jack. For an engineer you'd make a fine physicist. We'll collect betas emitted by some radioactive element of long half-life time and let them charge a condenser. When the condenser is charged . . . boom."

"Excellent, doctor. But let's amplify it first so we get enough juice to trip a solenoid or something."

"Can you build me a real compact high-gain amplifier?"

"Sure. The hearing-aid people have made millions of them."

"Next problem, please," said Dr. Martin, his cheeks burning with enthusiasm and fever.

Engler pulled a blank sheet out of his pocket and pretended to read: "Should Dr. Martin and Mr. Engler have a swim in the Blue Springs

Motel pool or have a few beers before dinner?"

Dr. Martin answered just as seriously. "In reference to your suggestion this writer is of the opinion that one short beer would be in order."

"Let's go."

The Internal Revenue Investigator enjoyed this. He put his feet on his desk until the swivel chair under him groaned to a stop. He shifted the telephone hand-piece from his left ear to the right and said with studied casualness: "Yes. And boss, about those TCR 1's you mentioned. The guy that deposited all that cash is a contractor. Seems he built a small plant or something out here. So I checked with that Burke fellow at the newspaper. Seems it is a government project. Very hush-hush." With a malicious grin, he added: "Do you know of any government agency that pays in cash, boss?"

"No. Only the——"

"Want me to check some more?"

"No, no. Drop the matter, and no reference to it in your typed report. Understand?"

The tables were all set for dinner when Martin and Engler got to the big building. They joined Dr. Plauenstein, mathematics, and Dr. Werner, physics, another research team. Engler carried six bottles of beer over to them after he had performed the introductions.

He was telling a story while filling his own glass and filled it too full. The head was on the point of spilling over the sides. Dr. Martin put the edge of a table knife across the glass. Not a drop of the liquid was lost.

"Very smart, but how does it work, Dr. Martin?"

"I guess the sum of the two semi-heads is larger than the original head," Martin said, and everyone laughed at the scientific attitude applied to the foam on a glass of beer.

Everyone but Plauenstein. He got very serious. "Dr. Werner," he said, "there is your solution."

"You are right," said Werner, just as seriously.

The others wanted to know what problem, but were brushed off. Werner and Plauenstein left the room and moved out on the veranda, where they doodled seriously on the back of an envelope.

"That's carrying security a bit too far, don't you think?" said Jack Engler and poured himself another glassful.

Allan Todd, former attacker of tavern furniture and lathes, started another cut. He measured the outside diameter with a micrometer, turned the cross-slide in sixty thousandths of an inch and engaged the longitudinal feed. The lathe was running at maximum speed. "This stuff sure machines nice," he said, looking with pride at the eighty finished cylinders gleaming a whitish grey.

He had never turned pure cadmium before.

Roy Lane, former guest of the U.S. taxpayer for three years, eight months and four days, had the sheet metal shop all to himself. Brake, bender and seamer, as well as all the other tools, were as new as the name he was using ever since he had met that gentleman on the train.

The pile of shipping containers grew every hour.

Anton Novotny, tool and die maker, had no more worries. The first few days the lack of a nagging wife had seemed strange. Like having a painful steel sliver

suddenly removed. But now he was not even thinking about it any more.

He just concentrated on fitting the spring-actuated solenoid release lever.

BY SPECIAL MESSENGER,
DESTROY AFTER READING.

Project: 739

3rd Progress Report

1. *Security.* (a) *the mechanical workers* we employ have all been carefully selected. None of them are in any position to break security. Each worker is only aware of his own sub-assembly. (b) *the scientists* work in teams of two, but there is no connection between different groups. All problems given to them are quite meaningless by themselves. Some questions are given in the form "what countermeasures do you suggest." (c) all *suppliers, contractors, etc.*, know this affair only as Project 739 and consider it quite top secret. (d) *The population at large*, as far as they are aware of the project at all, have been warned by their newspaper as per enclosed editorial.

2. *Design.* (a) *Timing device.* Martin and Engler have developed an extremely accurate timing mechanism which exceeds the specifications, and is independent of temperature variations. (b) *Combination.* Plauenstein and Werner have eliminated the old method of combining sub-critical masses in separate containers and the attendant neutron-loss. The *entire* mass is contained in one envelope (rubber) in an elongated form. This shape favours neutron escape below the chain reaction level. After triggering the mass assumes a spherical shape under the pressure of its own envelope.

3. *Production.* We have the required number of units on hand and expect your shipment of the material as well as instructions when the boxes should be delivered at destination. Air-Express schedule enclosed.

4. *General.* It was a brilliant idea to make these units right in the U.S.A., but without American secrecy regulations we could never have pulled it off.

(Signed) Ivan.

Two enclosures.

FANZINES

This month we are going to talk about British fanzines. It must be emphasised that the order in which we deal with these publications means nothing. It must not be construed as a silent assessment of worth.

CAMBER is a fairly new fanzine, only two issues at the time of reviewing. It is put out by Fred. J. Robinson at 63 Newborough Avenue, Llanishen, Cardiff, South Wales. It costs 9d. a copy (15 c.) or 3/- (50 c.) for four issues. The shape and format tend to vary, but the standard of the contents has remained at the same high level in each issue. Number two is more or less entirely devoted to descriptions and discussions about the London Convention last year, not in too serious a vein, though obviously showing great perception—some nice things are said about *Authentic's* editor! It's too early to say whether this fanzine will honour the ranks of British amateur publications, but there seems no reason why it shouldn't.

SPACE-TIMES is the monthly organ of the Nor'-West Science Fantasy Club and is published from 40 Cranley Gardens, Kensington, Lon-

don, S.W.7.

There are only about eleven pages, not too well duplicated, devoid of illustrations and with somewhat febrile article headings. The content is very, very fannish, with a strong tendency towards the adolescent, and doesn't really give anything in return for the price.

HYPHEN is a case in point. This costs only 9d. a copy (25 c. for two, or a U.S. sf magazine or pocketbook) and contains a great deal of "meat." To begin with, it has around twenty pages, quarto size. And every page is filled to capacity with the high quality material for which editor Walter Willis is famed. We say this about *all* issues, not just the one containing an article by *Authentic's* editor! HYPHEN is edited and published by Walter at 170 Upper Newtownards Road, Belfast Northern Ireland—where SLANT used to come from. It comes out more or less monthly and always contains at least some material by well-known people, British and American. The Irish contingent of British fandom is noted for its humour; HYPHEN is full of it, mostly adult, too. A very good buy.

ORBIT is a comparatively new publication from the Leeds Science Fiction Association. Edited by G. Gibson from Little London, Aberford, Nr. Leeds, it costs one shilling per issue. This could be too much, as in the case of SPACETIMES, though ORBIT is certainly better value. It has fifteen pages and is rising with each issue. It has contents that compare very favourably with the majority of British fanzines—but not with the minority that forms the cream. And it contains illustrations, which make a deal of difference. Admittedly, the illustrations are, in the main, rather poor, but no doubt they will improve. But from this point of view of *giving*, ORBIT is too highly priced. It would seem that fans may pay out more than a fanzine is worth, simply to support the movement behind it; and that, we suppose, is a noble thing. But the

fanzine in question must be prepared for straight criticism when being reviewed for many thousands of readers who may not share these altruistic tendencies.

THE MEDWAY JOURNAL is still flourishing, as well it might, seeing that it is put out by the most active fan group in Britain today. Issued at 9d. a copy from 21 Granville Road, Gillingham, Kent, it is edited by Tony Thorne, the sharp and competent mind of the group's activities and the recent Medway Science Fiction Convention—which was a thoroughly enjoyable affair, as good at least as the London effort earlier in the year. Though mainly local in character and contributors, THE MEDWAY JOURNAL manages to infuse an air of internationalism into all its contents. There is something here for everybody.

*He was so young to die,
but, after all—he'd
signed the papers!*

In Time of Sorrow

by LEONARD PRUYN

Robertshaw looked at his wife, across the breakfast table, and wondered why he didn't love her any more. He'd thought about it for weeks now:

What was wrong with Meg?

He watched the young woman in the fresh morning dress and knew he had the answer. It was simply because Meg was old-fashioned and had loved him.

She was just too sweet.

He sank down in his chair, the dull white kitchen chair, the wrinkled pyjamas pulling tight about his legs. Robertshaw ran a hand through wildly tousled hair, tried suddenly to rub the sleep from aching eyes. Meg was too good, he thought; a woman who saw wrong in nothing. And she loved all things, and all *equally*. Like "My Last Duchess," she smiled at everyone. Robertshaw considered. This was what was wrong with

Meg—there was no give and take. Only give. There was no *fire*.

Robertshaw added up the accounting sheets of one man's life: three days now till New Year's, seven miserably affectionate years with Meg, still a payroll clerk in our Lord's year 2440, and the two big things that had happened to him. He, Robertshaw, had fallen in love with the most ravishing night club singer of the forties, the irresistible and gorgeous Dolarita. What was more, this Dolarita was *full* of fire. And she loved the name, *Robertshaw*. The second big event?

Robertshaw had decided to throw an *Old Lang Syne*.

"Have you finished the guest list, dear?" Meg said, handing him his breakfast plate.

"The important ones." He scratched his head. "No—you handle that."

"It's all too terrible," she said, her hand shaking at the toaster.

"What?"

"You're sure you want to do it?" she said, now stacking the toast and cutting it. She'd asked him the same question a dozen times since Sunday,



still not wanting to believe it.

It's every man's privilege, he'd replied, *and the State provides a pension.*

"You know I've given it thought," he said, half-heartedly, poking in disinterested fashion at his scrambled eggs.

And when she'd asked him *why*, he had replied that he'd had enough. One could talk that way to Meg. That was why he hated her—why one always hates the kind of person who can suffer quietly. They were a great irony, this type. She would watch him die, in duty and in loyalty, and she would not question why, not really. Meg would just accept.

Robertshaw released his thoughts and looked up. Meg was standing there now, the coffee pot held limply in her hand. She was a beautiful woman, really, and quite pitiful when she began to cry.

She dropped the coffee pot against the table, causing the stacked toast to flip and fall to the floor, the brown squares of bread sliding drunkenly across the shiny surface at their feet like the discs of a shuffle-board game.

"Robertshaw," she said, "Oh, Robertshaw."

Mr. Gestorben arrived at the Robertshaw household nine o'clock prompt the following morning—a little man in a black suit, with narrow lapels and just a suggestion of shoulders.

The little man pulled up the bright chintz-patterned chair next to the sunny window and opened his briefcase. "You're doing the sensible thing," he said. He smiled automatically, the white veins at his throat stretching with a slight tautness. When he spoke, it grated—like a sing-song, with a jingle. "Mori-bundus Brothers never sleep," he said. "They wait to serve you—in time of sorrow."

Robertshaw sighed. "Yes, I know," he said.

The little man seemed disappointed, even angry. He snapped the papers in his hand. "Have you decided on accommodations yet?" he asked.

Robertshaw leaned back in his big leather chair and began to clean his fingernails. He watched the little man from the corner of his eyes. They really were a farce, these pompous puds, he thought. "The most reasonable," he said.

Mr. Gestorben made a note.

"A *small* party," Robertshaw said, giving the Moribundus man a dirty look for no real reason. "Just the most intimate friends, and members of our immediate families." He yawned, rubbed his leg and thought of Dolarita. It would take some money. "Mr. Muerto is handling the details," he said, "but I suppose you really *are* routine."

Mr. Gestorben pulled two transparent lips across his teeth and almost smiled. "Yes, of course," he said. "As Mr. Muerto's assistant, I want to make these three days the happiest of your life."

"Then don't be facetious—please!" said Robertshaw, with a grimace, remembering that Muerto probably hadn't even discussed the matter with this man. What the hell, he thought. "I've made a great decision," he said, "and I'm happier for it."

"That's the spirit!" Mr. Gestorben said, without enthusiasm. Like a twitch, the little man showed his teeth, in what Robertshaw again presumed to be a smile. "Far too little laughter these days," Gestorben said, with an air of reminiscence. "They've lost the flavour of the thing." He

rubbed his chin. "Why—people throw an Auld Lang Syne like convicts at the guillotine." He jumped up and began to pace the room. He laughed with heartiness, but also, Robertshaw thought, with the acrid taste of mockery. "How about Halfway House," Gestorben said, "or what's for Kickoff House, for a ribald touch?"

He chuckled merrily and sat down again. "It's an adventure, you know, a *départure* and a time for celebration——" He plunked his briefcase. "You pick the wines, my boy. It's no time for sorrow!"

Robertshaw grinned, remembering Moribundus Brothers' motto. He watched Gestorben push aside the curtains and admire his full-blown roses and wide expanse of garden. He listened half-heartedly to the monotonous drone of the little man's voice. *Robertshaw*. Dolarita had liked that name. What is more, Dolarita had liked him. He leaned back in lazy reverie, sleepily watching Meg show Gestorben to the door. They talked in muted whispers there. Dear old Meg! Probably asking Gestorben to have the Dispatcher hit him good and hard, to ease the pain.

It would be a laugh when he saw Muerto!

Angelus Muerto was a dark-skinned man, with the look of sunsets at Capri about him, or the shadowed canals of a Venice night. But there was no humour in his eyes. He spoke with the broad, flat dialect of Santa Tomas.

"By me, it's purely a business deal," he said. "What's my cut in the loot?"

Robertshaw had lit a cigarette and shot the man a crafty look. "A third," he said.

For hours now, this had been the conversation: Robertshaw fighting for two-thirds the payroll, Muerto insisting on a half.

"Look——" Muerto said, "what other establishment would do it?" He frowned. "It's too risky!"

Robertshaw leaned back in a Moribundus Brothers' slumber chair and gave Muerto a good long look. It was worth it, and he knew it. Dolarita and he would still have a small fortune left. Anyway, he'd screw Muerto too—what difference did a promise make?

Robertshaw coughed his smoker's cough, and leaned back now, in the soft, pink cushions. He'd try his pipe,

for a longer smoke. Muerto waited, as usual very patient. Robertshaw thought again of Dolarita: *she was such a doll!* He remembered the night he'd worked overtime with Dolarita—she had wanted to get "comfortable"—and how comfy can you get! How he loved those bare midriffs, the way she walked. Like a sex machine, he thought.

"You're right, Muerto. I've been unfair." He stood up and crossed the room. "One half the take," he said.

Angelus Muerto was pleased. "*Any time,*" he said.

Robertshaw shook his head and moved to the leaded window. Moribundus Brothers was a lofty place—which is to say, like a big barn. It covered many acres. Through the window, and across the lawns, Robertshaw saw an endless vista of sepulchres, each one more monstrous and grotesque. Mortuaries and cemeteries had not changed there—even in the Modern Age, it was tradition, and accepted for what it was. Man is very vain, thought Robertshaw. "I wonder if they'll remember me," he said.

"Do you care?" Muerto said, picking at his teeth.

"Not really."

Robertshaw returned to the slumber chair. "Who will do the dirty work?" he said.

"Mr. Gestorben," the Chief Dispatcher said. "We've pulled this one before, you know."

Robertshaw was somewhat jolted, especially now he'd offered Muerto one half the payroll loot. "How often?"

"Four others," Muerto said, "were phonies."

Robertshaw let the subject drop. "But about the details——" He recalled his ever-loving wife. "And what if Meg should want to watch?"

Muerto talked in business fashion. "That's all taken care of. In the event she uses the spectator's window, Mr. Gestorben will use a rubber pipe," he said, doodling with his pencil. "You can be certain it'll give you a slight headache. But——" he paused, "that's all."

"And the rest of the arrangements?"

Muerto gave a knowing smile. "The hearse will take you straight to the rocket port." He winked obscenely. "They say that life is pretty soft on Venus, if you're not alone——"

Robertshaw felt a warm

glow inside, and laughed at Meg. Like a museum piece, he thought. Chintz-patterned chairs in a rocket age!

He shook hands with Muerto and left.

He hadn't told them at the office about his Auld Lang Syne. It was Thursday, and the day before a holiday, when Robertshaw robbed his company. These things were easy. They hadn't even marked the bills. The day after tomorrow, after his Auld Lang Syne, they'd arrest Meg, thinking he'd left the money for her.

Poor Meg. He'd thought a lot about Meg for the past two weeks. The first time in their marriage she'd gone out evenings and hadn't told him where. The old bag was really quite upset. She was in the bathroom now, the old-fashioned bathroom like people used to have, all dainty and in blues.

She was getting ready for the party.

"I saw Mr. Gestorben today!" she bubbled brightly, through the sound of shower water.

"And——"

"It's all been planned, dear," she said, entering the room, with a bathrobe about her

shoulders. A dumb clod, this Meg, thought Robertshaw.

"What is planned?" he said.

She looked hurt, then brightened like a child. "Why, the dinner, Robertshaw!"

"Oh that." He lit his pipe. "You've planned it?"

"Even to the wines!" She went to the bed, sat on the edge and began to pull up her hose.

He smiled with tolerance. "You've been very brave," he said. "Who's coming?"

She rubbed her chin. "The relatives, of course." She grinned and pinched his nose. "And your dearest friends, you ape!"

"Who?"

She looked thoughtful. "Well—there's Hansotte, whom you haven't seen in years . . ." She teased him. "Then, there's Mabel—your old school flame!"

"Ah."

"Then Dr. Bratton." She shook her head. "You two were so close—a few years back."

Robertshaw was seized with sudden panic. "No one from the office?" he said.

"Not a single one," she smiled. "I know you hate those people."

"It doesn't matter."

"Poor dear, *you're* the one who's brave." She took his hand. "We'll make a party of it!"

Robertshaw withdrew his hand and crossed the room. "Indeed we will, my darling!"

Meg stood up when she heard him say it, walked over and took him by the shoulders.

"I want to watch it, Robertshaw," she said.

Restraining the distaste he felt, Robertshaw placed the sanctimonious kiss upon his wife's forehead.

"You're sweet," he said.

Robertshaw had chosen Kickoff House for the ribald touch, a little cottage hidden deep within the gardens of the Moribundus tract. He found it surrounded by young saplings and a prodigious growth of flowers, with quaint stone steps twisting safely to its door. His friends were waiting there, his relatives nearby. Like a garden party, thought Robertshaw, the way old friends stood so awkwardly about. It was their waxen smiles that bothered him, he felt. Then Aunt Phil began to cry; and his brother-in-law took him by the shoulder,

bravely, under the warm noon sun. They talked of trivialities and only Angelus Muerto had a dour look, but Muerto was a businessman and never changed. Meg flitted like a hummingbird from group to group.

When Muerto gave the sign, they stepped inside. It was a gay little cottage, and the banquet table glowed with the lights of many candles. Like the Last Supper, thought Robertshaw. How Meg would hate to hear him say it!

Dr. Bratton was the first to toast. "To a darn swell guy!" he said. The toast was seconded, and after the routine round of salutations, the guests fell quickly to their dinner, Robertshaw, of course, sitting at the head of the table, in the place of honour. A pleasant chitchat filled the room.

"Having any spectators?" asked Hansotte, at his right. Robertshaw looked at the dark blue uniform and handsome, youthful man. Hansotte was now patrolman on a regular flight to the much-publicised Galaxy Hernandos Bab.

"Just Meg." He took a bite of sirloin. "She wants to see it. Why, I'll never know."

Hansotte looked concerned.

He whispered: "Do they *really*——?"

Robertshaw laughed. "Club a man to death, you mean?"

Hansotte nodded, gravely.

"Afraid so, old man. It's custom, don't you know."

Hastily, the young patrolman downed his drink, and when a Moribundus servant filled his glass again, he stood straight up. "To a man with *guts*!" he said.

The dinner was a dull one, thought Robertshaw, and seemed to last too long. "Now don't go wild," he said, quick upon the Yorkshire pudding, "but how's for after dinner jokes?"

"Well," said Mabel, adjusting her skirts and standing on a chair, "there was this travelling spaceman——" A red-haired woman with too much fat, she was quite drunk by now, thought Robertshaw. He'd heard the joke before, a man's joke, the kind to bother Meg. Old Mabel was a sport.

Then when he'd had enough, he gave the high sign to Muerto, who moved quietly through the room, advising each guest of protocol. Now savouring the vast ill-at-ease and clumsy silence, Robertshaw leaned back and thought of Dolarita. Venus had a

reputation! Unconsciously, he caressed the moneybelt beneath his shirt.

She could do her act when the money ran out, he thought. She'd knock 'em dead on Venus with her dance. Seventh veil, indeed!

The servant filled his glass again.

How much fun to find out if he'd ever tire of Dolarita!

He looked up to see Aunt Phil was smiling bravely. Then they began to come to him, each one alone, to shake his hand and say goodbye.

"God speed!" said Dr. Bratton.

She had such pretty legs!

"Guts!" said Hansotte, "real guts!" and damned near broke his wrist.

Very soft skin, with a fire that ate you up.

"Give 'em hell!" said Mabel, and chucked him where it hurt.

Oh Dolarita!

Then Meg standing there with tears, the smile all gone. Dull, myopic hag, he thought.

"Robertshaw . . ." was all she said, and touched his fingers.

Robertshaw pulled aside the curtains and entered the small back room, listening to the tense, expectant breathing of friends he'd left behind. Impatiently, he watched the door across the room, occasionally glancing to the nearby shuttered window of the spectators' chamber.

But when the window opened, Marguerite Ophelia Robertshaw was somewhat less than by herself. Beside her stood Gestorben, with checkered suit and summer hat. Mr. Gestorben had to remove his hat when Meg leaned down to kiss him.

It was then that Robertshaw found pause for wonder—but not for long. When the big grey door across the room had opened, it was not—needless to say—Gestorben.

The big man held the lead pipe quite loosely in his hand.

The MARCH OF SCIENCE

A regular feature giving news of the
latest scientific developments and ideas

FOR CHEESE—

That antibiotic substances have uses outside the field of medical science is indicated by some research recently carried out at the National Institute for Research in Dairying. Here, Dr. N. J. Berridge has shown that the antibiotic *nisin* is of great commercial importance in the production of cheese. While cheese cannot be made without the help of certain bacteria, other bacteria are able to spoil the process, producing large quantities of gas and making the product unsaleable or even inedible. Nisin, added in small quantities to the cheese mix, is able to prevent the growth of these harmful bacteria while not affecting the useful ones, thus reducing wastage and, indirectly, maintaining a low price for high quality cheese.

FOR CANCER—

News of antibiotics playing a new role also comes from the International Congress of Microbiology, held in Rome a short while ago. Dr. Selman A. Wakesman told the assembled scientists and cancer specialists that he had treated 150 cancer patients with the antibiotic *actinomycin C* and that in most cases the patients gained weight. In the type of cancer known as Hodgkin's disease, very marked improvement was observed—the tumours actually decreasing in size. Even though, at the time, all else had failed to help the sufferers from this disease, two years have gone by without their relapsing. Dr. Wakesman was careful to point out, however, for the benefit of similar patients and their relatives, that this im-

provement will have to last at least another three years before scientists will be justified in thinking that they may have a cure for Hodgkin's disease. It would be most unwise for anyone to think that the cancer problem has now been licked. But this discovery of Dr. Wakesman's might be the beginning.

MAKING COSMIC RAYS

An instrument that can manufacture in the laboratory some of the particles that constantly bombard Earth from outer space is the *cosmotron*, now in use at Brookhaven. This triumph of nuclear engineering accelerates protons to an energy level of 2,200 million electron-volts and throws them against carbon targets. Neutrons of equivalent or lower energy fly off the targets together with charged particles. The latter are deflected by a magnetic field and the neutrons allowed to pass on to a cloud chamber, where they are observed in an atmosphere of hydrogen and methyl alcohol. Many high-energy cosmic ray particles are produced in this manner, including the very first artificial manufacture of *V* particles.

SEEING RED—AND BLUE, ETC.

People who state dogmatically that human colour vision depends

on several retinal pigments, each sensitive to a different frequency, have been dealt a telling blow by Dr. H. J. A. Dartnall of the Vision Research Unit of the Medical Research Council. Dr. Dartnall points out that although the extraction of retinal pigments has produced six different kinds, they are found in different species. The human retina has so far yielded only one pigment, visual purple, to extraction. And there is no evidence to suggest that others are present. Thus, the question is still unsettled, and there can be no dogmatism about it.

NEW PIGMENT

A new and versatile pigment has just been discovered in an American paint Research Laboratory. It is called *Midas Gold* and is an organo-iron complex produced as a concentrated dispersion in solvent. As a transparent colouring material in coatings and stains, Midas Gold has the transparency of a dye combined with the non-bleeding, heat-stability, chemical inertness and light-fastness of an extremely durable pigment. In large masses it looks reddish brown, but when laid down in a transparent film over a highly reflective surface, such as aluminium foil, it produces a brilliant golden colour. The properties mentioned above, and its powers of filtering out ultraviolet rays from incident light, make

Midas Gold a very valuable industrial pigment. It is finding great use in America as a car finish.

A STEP ON THE WAY—

One more step towards the construction of a rocket that will leave this Earth and journey into space is the new *Super Sprite* rocket motor developed by de Havillands to assist the take-off of heavy military aircraft. The fuels used are hydrogen peroxide and kerosene, catalysed by a secret solid substance that takes the place of the usual liquid calcium permanganate. This catalytic material converts the hydrogen peroxide into oxygen and steam. The oxygen is used to effect combustion of the kerosene, which is injected. A completely smokeless exhaust results from the omission of calcium permanganate. The *Super Sprite* develops a thrust of 4,000 pounds, weighs 600 pounds and has a burning time of 40 seconds. The constructional details are, unfortunately, a military secret.

AND ANOTHER TO FOLLOW

Sign of the increasing interest in space flight is indicated by the latest Annual Report of the British

Interplanetary Society. Last year there was a twenty per cent increase in membership, less than in previous years, but still swelling the ranks of people who actually *demonstrate* their belief in the possibility of conquering space. The Society now has 2,419 members. Of these, 584 are Fellows (holding scientific qualifications) and 1,835 Ordinary Members (not holding any special scientific qualifications). The annual subscription for ordinary members remains unchanged at £1 11s. 6d. (one guinea for those under twenty-one). The Society's address is 12 Bessborough Gardens, London, S.W.1.

INNINGS OVER

While speaking of the British Interplanetary Society, it might interest readers to note that Arthur C. Clarke, who has been Chairman of the Society for three consecutive years, is retiring from that position due to the fact that he intends to spend most of this year in America. During his tenure of office, Mr. Clarke worked hard and long for the Society, putting it on the map, so to speak, by his own prolific output of articles and fiction. His absence from the Chair will not go unnoticed.

Father just couldn't bear to see
anybody hurt . . .

PROCESS

by H. B. HICKEY

It was the first time since they'd gone underground that Kermit had seen Samuels and it was a long moment before recognition came. And with recognition came also the shock of Samuels having changed so much—and further shock because change was a function of time and the time was ten years.

And there had been five years of war before they went underground.

As they slammed through the alloy doors of the elevator and shot downward, the din of raid sirens faded and there was only the sound of their laboured breathing. Above them, on the car wall, a phosphorescent picture of Father glowed benignly—a reminder of his omnipresence, his omniscience, his omnipotence. They were safe.

Samuels broke the silence. "Kermit?"

"Yes. Samuels?"

"Of course."

Kermit's curiosity was almost overpowering. Samuels had been a philosopher; one of the most brilliant, in fact, that their era had produced. So what was he doing here in Tech Section? Come to think of it, what was a philosopher doing anywhere?

But Kermit didn't ask. Not after almost ten years. DON'T ASK QUESTIONS! If you ask you may be answered. Then you will know. If you know you may tell. ENEMY is everywhere.

"How have you been, Kermit?"

"Fine, praise Father. And you?"

"Praise Father."

Kermit thought Samuels might have said more. But the car had stopped and they were stepping out into a sixth tier shelter, into a grey-shirted,

grey-trousered mass of Techs of both sexes. A p.a. speaker droned news of the battle.

"—and now ENEMY finds himself cut off from retreat, trapped and bewildered by Father's brilliant tactics. Of thirty fighters ENEMY has lost



twenty-eight—correction, twenty-nine. All bombers are down.”

There was a slight break. “Attention! The battle is over! Return to sections!”

Filing into the elevators, everyone sang: “Glory to Father Protector of us.”

Beyond a doubt it had been a great victory and it would be a long time before ENEMY tried another of his sneaking attacks. But, equally beyond doubt, Kermit knew that this same day there would be Father’s voice from the speakers, telling everyone that vigilance must never be relaxed.

Curiosity beyond one’s professional curiosity was deadly dangerous, but Kermit found himself wondering about Samuels. There simply was no room for a philosopher, so where did Samuels fit? Kermit could not visualise him as a Tech, Mechanical. Still less as a Producer. Certainly not as a Menial, not with Samuels’ frail physique.

Logically, it left only three classes: Servant, Friend, or Brother.

There was a Servant for every ten citizens, a Friend for every hundred, and a Brother

for every Section. Since Kermit knew his Servant and his Friend there was left only one logical solution. The Section had a new Brother, and Samuels was he.

“Q.E.D.,” Kermit murmured, half to himself.

“What say?” asked Grath, his lab partner.

Kermit came awake, his tongue already formulating the lie. “Thirty. It was a masterful victory. ENEMY will not soon forget it.”

“Praise Father. And with Father’s genius directing our efforts here it won’t be long before final victory.”

Grath was a young man, not more than twenty-five. He was so thoroughly conditioned that the years before the war—if he could recall them at all—must be a vague dream. Like the rest of the younger ones he was completely a product of Father, Brother, Friend, Servant, us.

As for the older ones, who might not have been so easily conditioned—well, there were few left.

Kermit was an older one. He’d been almost twenty when the war started. But the survival instinct was strong in him, and along with the in-

stinct some measure of his-
trionic ability. What he
couldn't quite believe, he'd
pretended to believe.

He knew he'd been watched
closely. But Father needed
him. Electronic calculators
could be built, excellent re-
searchers like Grath could be
trained; but it took a Kermit
to ask the calculators the
proper questions, to point a
researcher's nose in the right
direction.

Like now. He could see
Grath had come up against a
stone wall.

"Something's wrong, Ker-
mit. I keep running into an
unknown in the equation."

"Like what?"

"There's a sort of quantum
jump. I mean, where the
difference in waves gets
qualitative, rather than
quantitative."

Kermit felt a tingle run up
his spine. "Are you sure?"

"Yes, of course. Are *you*
sure? I mean, that the wave
you gave me is the right one?
I've never run into one of that
length and pattern."

Kermit was sure he hadn't.
It wasn't the type of wave an
electrical engineer would nor-
mally run into. It was a
wave left over from the old

days when a man's mind was
free to roam into foreign
fields. It was a wave left over
from the days when a brain
surgeon interested in extra-
sensory perception might
write a note to a Nobel
prizewinner in physics.

There had actually been
such a note. And Kermit, the
prizewinner, had almost for-
gotten it. But not quite. As
with all things similar, the
description of the wave had
been filed in Kermit's memory.

It was not an ordinary
brain-wave. The surgeon had
found it in the patterns of
several of a Dr. Rhine's sub-
jects, people who had re-
vealed some definite ability
in e.s.p. Weeding it from the
waves of thalamus and cortex,
the surgeon had localised it in
what he chose to term a
"rudimentary post-cortex."

"—actually a sort of
node, possibly the beginning
of the brain of the man of the
future—the God-man, Super-
man."

So the note had gone. And
Kermit had laid it aside.

Yet the wave might still
serve a purpose.

This was the problem:
Bombs could no longer reach
ENEMY, just as bombs could

no longer reach us. Neither could micro-organisms be used effectively, nor poison gases, although both were constantly being developed.

Therefore—stalemate.

Unless there was something which could penetrate miles of rock and steel and alloy. And this something could only be a form of energy which was electrical in nature.

What the energy could do when it arrived was problematical.

But the problem lay in Kermit's field. Therefore, memory had plucked from the files this wave, deficient in force, but promising possibilities of penetration.

A second problem, then: An equation leading to the transformation of electrical energy to kinetic energy.

The equation was within the realm of possibility. And yet—

"Let's see what you've got," Kermit said.

Grath handed over a sheaf of papers. Grath was a good man. The calculators were also good. Everything was in order. Except for one thing. Instead of an answer there was an unknown.

Kermit grinned wryly. This was the sort of thing he liked; the challenge that gave some measure of zest to his existence.

"All right, Grath. I'll take it for a while."

All desks were chest level. Nobody sat. While Grath busied himself at a calculator, Kermit spread the papers before himself on his desk.

He worked backwards, starting with the final result that contained the unknown. On the first two sheets there was nothing of value, only an orderly progression of symbols.

But when he came to the third sheet his hand trembled. It was exactly what he might have suspected—the unknown was a part of the original wave equation, but concealed in it. A trickle of perspiration inched down his broad forehead and into the deep line above his nose.

Just then the p.a. speaker broke into a soft chant. It was the usual thing, praise of Father, that was droned at regular intervals.

The natural thing would have been to ignore it. But Kermit had learned better. Ignored, the chant droned itself into the unconscious. By

paying it polite attention for the duration, Kermit was able to dismiss it completely afterwards.

But this was not the time. He cursed under his breath and snatched up the papers and headed for his private office. As head of this department he was permitted to have a private office, on the tacit understanding that it would seldom be used.

Grath stared at him, startled, and Kermit muttered: "I've got to think."

Thinking, he imagined, was anti-social. So was privacy. Thinking without privacy was a contradiction in terms. Considered that way he himself was a contradiction—a man whose value lay in his ability to think, without the conditions which might make creative thought possible.

How had the thing started, anyway?

Kermit grunted. It hadn't started. It was part of a process.

There had been the years of tension before the war, the tension of preparing and wondering, of a great and complex country preparing to battle another great country. Eventually the tension had become unbearable.

The certainty of war had actually been preferable. And the certainty that the leaders knew what was best.

Gradually the leaders had merged into one figure, much easier to visualise, much more human, symbolic of the old certainties of Everyman's youth—Father. Father knew, Father guarded, Father punished.

When the holocaust had turned above ground into a radioactive waste, Father had taken them underground to the security of the burrows his foresight had prepared.

It was about then that Brother and Friend and Servant had appeared, familiar terms used to make new relationships palatable. Actually, a Servant was a combination of warden and spy; a Friend was really a policeman. Brother was judge, with no court of appeal.

Strange that the new order was so comfortable, that the change had been so imperceptible. Everything seemed quite normal. Those who hadn't adjusted had vanished, their names appearing later on lists of heroic war dead.

Kermit had adjusted himself, at least outwardly. Now he wondered, why?

He shut the door of his office behind him and there was a sudden blissful silence. No more hum of machines, no bustle of workers.

"Praise Father," he sighed, and caught himself up short. He had said it. He had said it without thinking, like the rest of them.

He wondered again—Why? What was the use?

There was no doubt about it. The wave equation had contained the unknown quantity. But Kermit himself had worked out the equation and that wasn't wrong.

Unless there was something that hadn't met his eye. He'd had to rely on the brain surgeon's data, of course, which had seemed reliable enough. His memory hadn't been faulty; it never was.

The crux of the thing was the wave itself. Kermit knew he had to come to grips with it.

Just then the door opened. It was his Servant.

"Yes?" Kermit said, trying hard not to appear irritable.

The Servant was a small man, lean, with quick, black eyes that flashed about the

small room. "You've been here long?"

"About twenty minutes, I imagine," Kermit said.

"Yes." The Servant consulted a notebook. "Then you came in here during the last chant."

"I had an inspiration on this problem, which is of great importance to Father and us."

"*Most* important is unity, oneness."

The rebuke delivered and entry made in the notebook, Kermit's Servant pursed his lips. "When you left the lab yesterday you forgot to turn off the light."

"I'm sorry. I *did* forget."

"No excuse. You did the same five days ago."

Was there no end to this? The wave equation drew Kermit like a magnet. Something told him it was the most important problem of his life. Why must he be pestered with these picayune matters?

"I'm *very* sorry. I've been concentrating so hard on this problem——"

"Ah? You assume that a problem vital to you at the moment is more important than wasted electricity, which is vital to all?"

A long time ago Kermit had lost his sense of the ridiculous, but this was too much.

"Once before," he said, "this came up. I did some figuring. The amount of electricity wasted as against even a minimum I assumed used by this one Section was infinitesimal. Since I helped design the piles that furnish the current I know we're in no danger of running short—not for a thousand years. Therefore, waste has nothing to do with it."

The pencil literally raced over the notebook page. Kermit realised he had gone too far, but he was not of a mind to retreat.

"Then what has it to do with?"

"Nothing," Kermit snapped "Conformity. I'm to turn off the light because I'm to turn off the light. Because all of us are to turn off lights. Another nail in the coffin of routine."

The pencil raced again. Black eyes studied Kermit as though he were an insect pinned on a board.

"This will be reported." The Servant jerked his head toward the lab. "Now. It is time for Father's talk."

Kermit moved briskly into the lab. This was not some-

thing to discuss, to even appear to think about. One simply did not miss Father's talks.

Besides, this had been an order. It had been several years since Kermit had seen anyone disobey a Servant's order, but he imagined that Servants still carried truncheons, still knew how to use them.

Grath was watching Kermit from under drooping lids. Very much, Kermit thought, like a citizen of the Middle Ages watching an avowed heretic. Probably wondering why lightning hadn't struck.

Down in the seventh tier were the libraries, and it was there Kermit went after Father's talk. The talk today had concerned the battle with ENEMY, but really it had not differed much from yesterday's talk. Or that of the day before.

Basically, Kermit realised, they were all the same. They began with a tirade against ENEMY, a few hate slogans, a reminder that the slightest slip meant defeat and disaster, and finally the assurance that Father would protect us and see us through to certain victory.

Grath was more intelligent than most, yet he gobbled up the stuff, running through the entire gamut of emotions as the stops were pulled.

So the millions of others in the underground cities—the exact population being a secret, of course—must react the same as Grath.

Thinking of Grath brought Kermit's mind back to the wave. He was in the medical library, having received permission to visit the section.

The library was complete. They had taken underground the recorded history of scientific thought. It was all on microfilm.

And it was all neatly catalogued. Just as Kermit had thought, the good brain surgeon had done a paper on his work for the journal of his speciality. A very thorough paper, too. Kermit went through the whole thing.

It turned out that the post-cortical node was not as uncommon as the surgeon had thought when he wrote Kermit. Many people had such a node.

As for the wave itself, it appeared as part of a complex of waves, some thrown off by the thalamus and lower

centres, others by the cortex—the thinking mechanism.

The doctor had even diagrammed the waves. Very carefully he had separated the post-cortical wave from the others.

Too carefully!

Kermit gasped. There was the unknown! The doctor had been a doctor, not a physicist. He hadn't realised that he was creating an artificial schism.

The post-cortical wave was not a separate entity at all. It was the end result of a process that started at the thalamus. The doctor had thought he was merely separating the waves; actually he had cut out part of the post-cortical wave, creating troughs where there should have been highs.

The equation had merely showed that something was missing.

However, the doctor had more to say on the subject. "While thalamic waves closely duplicate those of the higher animals in general, cortical waves are unique with Man. They must be considered waves of a higher type. And because of the type of individual in whom I have found these 'post-cortical' waves, they must be considered of a higher type still. There is

evidence of a logical progression, which I believe must lead us to metaphysical——”

Avidly, Kermit moved the film ahead to the next frame... DELETED. And the next frame... DELETED.

The last frame. “——and so certain inhibitory factors must be taken into account. These include beyond a doubt the factors of Conditioning and Purpose.”

That was all. Metaphysical considerations were not safe. They might have a bearing on political considerations. Therefore, some benighted censor had chopped them out.

For the first time in ten years Kermit swore. “God damn you savages!” he raged. And because he had to do something physical as well, he lashed out a kick that sent film flying in all directions.

His call came at 2130 hours. He came out of a deep sleep to find himself half erect, jerked upward by a powerful hand that had twisted the collar of his nightshirt into a throttling noose.

In the dim light of the dormitory's single tube, Kermit could barely see the features of his Friend. A moment later he could not

see even that much, for with efficient brutality the Friend's fist drove into his solar plexus.

There were two of them—Servant and Friend. Between them they half dragged, half kicked him out into the corridor. Kermit tried to stand, and stumbled. Something harder than a fist smashed against the back of his neck and drove him face first into the wall.

When they hauled him to his feet again, Kermit's nose was bleeding freely and his forehead had lost a good deal of skin.

“Move—move. *Move.*”

His feet hardly touched the floor as he was hustled along. Walls swam past vaguely, his stomach churned. Whether they turned left or right at corridor's end he did not know.

At last there was a door and a pause. The door opened.

“Here, Brother.” They might have been delivering a package.

“Good. Bring him in. There.” Kermit was slammed into a hard chair. “You may leave.”

“But——”

“He won't make any trouble. You've done a good job.”

The door swung shut. With a great effort, Kermit got his eyes open and focused his gaze on Brother.

He'd been right. It was Samuels. The lean figure of the former philosopher loomed tall and sardonic before Kermit.

"Here, wipe your face. You look awful."

Kermit accepted the cold towel. An astringent had been added to the water in which the towel had been wrung. Biting pain was added to the shock of cold, but the pain helped clear his head. When he handed the towel back to Samuels, Kermit was able to see clearly again. His mind, too, had regained clarity.

"Thanks, Samuels."

"*Brother!*"

"Brother."

"Let's get this straight," Samuels said. "You and I were once professors at the same university. We were considered equals. This is no longer so. I am your Brother."

"I'd guessed that," Kermit grunted.

"So? Apparently you have spent a good deal of thought on matters other than your work."

"Hardly a good deal," Ker-

mit said, dryly. "You've kept me pretty busy."

"Not busy enough, apparently. You're not a creature of impulse, Kermit. Today you did two things which indicate a background of wrong thinking, of lack of oneness."

Samuels paused. "In fact, such a background can point to one thing only. You are an agent of ENEMY!"

Kermit shut his eyes wearily. His head ached. He knew now that he was beyond help, doomed. There was only one conclusion to this farce. And it didn't matter any longer.

"Stop talking nonsense, Samuels," he said.

"You call it nonsense?"

"Certainly. You know I'm not an agent of ENEMY."

"No?"

"No. Because there is no ENEMY!"

There was a long silence then. Samuels hadn't changed expression. Yet there was a definite change in feeling in the room. It was with a visible effort that Samuels kept his tone light.

"When did you reach this remarkable conclusion?"

Kermit managed a weak smile. "I don't know. Some

time today, I think. Hasn't it ever struck you, Samuels?"

"Of course not."

"Strange. You know we have every facility for televising. Yet we receive all battle reports by radio. We're told that so many bombers have got through—but we've never felt even a tremor during a raid. Also, why have our own pilots never brought back films of their own successful attacks?"

Kermit waited for a reply, but there was none. He shook his head. "No, Samuels. I have a hunch that ENEMY ceased to exist as a great state about the time we went underground."

There was a long silence. Samuels studied him intently. "Very well, Kermit. Let's follow through your line of reasoning. Suppose you are right?"

"Then why this terrible hoax?" Kermit demanded.

"What would you have us do?"

"Go back aboveground. After ten years there are plenty of safe areas, free of radioactivity. Why must we stay here, like moles? Why the regimentation? Why the brutality?"

He leaped to his feet. "Worst of all—why this conditioning of people to live a weird dream-

life, a gibberish of us, Father, ENEMY—an insane fantasy?"

"Sit down," Samuels said.

Kermit remained on his feet. "No. Answer me, Samuels. Why was it necessary to kill man's most precious freedom—freedom of thought?"

"You talk like a child," Samuels snapped. "Have you ever thought of what would happen if we went aboveground, into a fight for land? We'd simply repeat every mistake in man's history, every squabble, every dissension, every civil war. Why is it wrong to bind people together, why is it insane to end their differences?"

"Have you ever thought of what holds a people together, Kermit? Common fears, common hopes, common symbols. Is it insane gibberish to give men those things?"

"Certainly," Kermit said. "Certainly it's insane if the fears, hopes and symbols are false to reality. Certainly it's wrong—if the purpose for which it's done is wrong."

Suddenly Samuels smiled. Until now he had been tense, as though a battle had been joined between himself and Kermit. Now he acted as though the battle were over, and he were the victor.

"Now you're in my field, Kermit. It's elementary that one set of hopes, fears and symbols is as illusory as another. One purpose is as good as another. We haven't taken away your freedom to think—you've had plenty of chance to think creatively. We've merely prevented you from thinking about nonsense, like purpose."

So there is was, Kermit thought. Their whole philosophy. And hardly a new one at that. Since they hadn't needed the brilliance of a Samuels to create it for them, Kermit imagined that with Samuels as with himself it was merely a matter of survival.

Except that Samuels seemed to have been better at self-deception.

"As a theory, it may be plausible," Kermit said. "But in reality it's full of holes. We've been kept underground simply because it's much easier to regiment us, watch us, *condition* us in a confined space."

His mind was completely clear now, clearer than it had been for many years, Kermit thought. But his legs suddenly started to give way and he had to sit down. Samuels was about to say something but Kermit cut him off.

"You're trying to create an ant society. Of course you'll say that ants seem to be content——"

"Which they *are*," Samuels said, smiling.

"Yes. Because their society fits their biological makeup. I can't imagine an ant having doubts, as I have. Men are simply not ants, Samuels."

"Most of them will behave as if they were," Samuels said, his voice suddenly savage. "Those who haven't—we've eliminated. You're too valuable to eliminate, so we'll re-educate you."

He laughed shortly. "You'd be surprised how easily you can be re-educated, Kermit."

"I wouldn't be surprised at all," Kermit grunted. "Given enough torture, drugs or whatever you use, I imagine I'd be just as pliable as anyone else. You could condition my reflexes so that at the mention of Father I'd bow, sweat, cry or dance a jig—anything you wanted. But I'd still be a man, not an ant."

"Why?" Samuels grinned. "Because you give off a 'post-cortical' wave?"

They didn't miss much, Kermit thought. They even knew he'd sneaked in a test of himself along with others he'd

done to check the doctor's findings.

"Precisely," he said. "Because man's development has been always from lower to higher functions."

"It hasn't kept people from acting like ants—or any other lower creatures." Samuels dropped into his own chair and crossed his long legs comfortably. "In fact, history tends to show that as the evolutionary process has gone on, men have been more and more easily swayed, handled—controlled—by superior persons. This might even be charted as a trend."

Kermit nodded. "I see. And you intend to speed up that trend through use of the post-cortical wave."

It was Samuels' turn to grunt. He crossed and uncrossed his legs several times, all the while studying Kermit.

"A rather clever deduction," he admitted, at last, on the obvious consideration that the admission couldn't do Kermit much good.

"No," Kermit told him. "Once I decided ENEMY was non-existent, the conclusion was inescapable. The only use for the wave would be against your own people."

Laboriously, Kermit got

back on his feet and began to pace the room unsteadily. His legs felt rubbery and his face seemed to be puffed up, making it difficult to breathe. Yet he felt a sense of exaltation.

He said: "Fortunately, you can't use the wave."

"You mean, without your help?" Samuels asked. "Don't worry. After your re-education you'll not only be willing, but you'll consider it a service to mankind to continue your work."

"I didn't mean that at all. I meant you can't use it either with or without my help!"

He leaned against the wall to steady himself. "I'm telling you this, Samuels, because you may have some influence——"

"Never mind that," Samuels interrupted. "Just tell me why we can't use the wave."

"For a very simple reason. You want to use it for the wrong purpose."

Samuels' eyes flared. "Stop talking nonsense! Are you implying there's a magical property——"

"Call it magic, call it nature, call it God—all the things Friends and Brothers and Father don't believe in. I don't know that I believed in them myself, until today, when out of the few words your cen-

sors had left in the medical journal I reconstructed the doctor's theory—and a true picture of the wave."

He paused, gulped a few breaths of air. "You see, the wave is of incredibly high frequency, really. It originates where all human energy originates, apparently, down in the very cells of which we're made. And it has all the potential of those billions of cells.

"It sparks our nervous and motor systems; as it courses through the thalamus it powers our emotions; in the cortex it generates thought, and in the higher centres of the cortex, creativity; and where it routes through a post-cortical node it has the ability to penetrate matter and control it, to penetrate mind and——"

"——and never does," Samuels said. "It may have such ability. I've never seen evidence of it."

Kermit nodded. "I know. That's where purpose and inhibition enter. I suppose you read the journal?"

Samuels grunted. "I noticed the words."

"Yes. Well, my theory is that they're directly related."

He'd never really had a theory. But suddenly the whole thing was falling into

place. It had to be explained in terms of structure and order, and that was precisely how Kermit saw it.

"It's axiomatic that every human being alive must have had common ancestors, therefore common genes and common cells. Our higher centres aim at individuality. But our very cells recognise kinship. Now suppose we purpose an act. Our senses may be dulled so that we don't see—or don't care—that others may be injured.

"But our very cells know it! Immediately an inhibition is set up. Our most powerful force is choked back, weakened, at the very source of its power."

Kermit shrugged. "That's why we've never seen the wave in action. It would take perfect integration of individuality and kinship. How many men could have achieved this? A Ghandi, perhaps. A Christ."

There was a long silence. Then Samuels said, slowly: "You know what I think, Kermit? I think you're insane."

Kermit sagged. It was no use. Samuels' shell was too hard. It would take more than theories, no matter how lucid, to penetrate.

"That's what I meant about not giving you time for non-constructive thinking. You've had too much free time, Kermit. You've lost contact with reality. You're at the stage now where you'd argue with Aquinas about how many angels could sit on the point of a pin."

It was plain the discussion was over. Samuels marched to his desk and jabbed at a button on its surface.

"If it were up to me I'd liquidate you," Samuels said. "You can thank Father's wisdom and mercy for your survival."

Suddenly Kermit was aware that the door had opened behind him and that two men had come in. Friend and Servant.

"Take him down," Samuels said.

Rough hands had him, were spinning him about. Inside, Kermit cringed, feeling already the threats of fists and truncheons.

But no blow fell until they were in the hall. Then it came unexpectedly, catching him behind the ear and hurling him forward into the waiting elevator.

Lying on the car floor, Kermit barely heard their voices.

"I hope Father doesn't decide to save him."

"Why should he?"

"Father can't stand seeing one of us hurt."

"This isn't one of us."

"You're right."

A series of kicks lifted Kermit out of the car. He felt himself being dragged along. Then he was in a large room, with Servant, Friend and several others. There was a table with clamps for hands and feet. There were metal rods. There was some sort of electronic machine with dials.

"I hope Father doesn't intervene."

"Why should he? This isn't one of us."

Another kick, drawing a scream from Kermit. Something hard and thin flailed across his back. Shirt and skin both parted.

Unbearable pain. And with each pain the question of whether Father would rescue Kermit.

How long it went on he couldn't tell. There was only pain and momentary release from pain.

He was on the table, unable to move. He was paralysed by electrical jolts. Without being able to hear himself, Kermit knew he was shrieking, shriek-

ing that he *was* one of us. Begging Father to save him.

And then it was over. Or was it only a longer interval? No, it was over.

Father's voice filled the room with compassion. "You mustn't hurt him."

There was a lapse of time. He remembered only Father's voice, soft and kindly. It came to him often and made him feel safe.

Another lapse of time, with no voice. Only men who came to take his pulse and listen to his heart beating. And then his mind cleared.

At least a week altogether, Kermit reasoned. There were large scabs on his upper arms. There were bruises which must have been welts a few days earlier. His body still ached in every muscle and joint when he moved. Therefore, the time must have been about a week.

That day when the men with the stethoscopes and baumanometers came they checked him and nodded their heads with satisfaction. Apparently he was getting better.

That was good.

Or was it? Maybe he would soon be well enough to torture again! The thought made

Kermit ill. How soon would they be coming for him? The next footsteps in the corridor might be the heavy ones. The next hands would carry no stethoscopes—only truncheons.

But no. He sighed with relief. He'd forgotten. Father had stopped them. Father wouldn't let them—

Around Kermit the room whirled and tipped. *So that was it!* This was re-education!

Now he understood the process. Torture—and all the time the discussion going on, the talk about such things not happening to one of us. The talk about Father protecting us. And then, when his body could take no more, the voice of Father. Kind Father, protecting Father.

It would go on and on, with the intervals perhaps growing shorter. Until ENEMY came to represent pain and degradation. Until us represented kindness and safety. Until Father was all that Father was supposed to mean.

Until his reflexes were so conditioned that he could not conceivably have any others. Until he were considered safe. Until he could work on the post-cortical wave for them, with no room for doubt in his mind.

It was horrible. It was bestial. And when he heard the first footsteps start down the long corridor outside, Kermit fell to his knees and prayed. Once, when he was ten, when such things were still done, he had prayed.

Now he prayed again. He was still praying when the rough hands jerked him to his feet.

Strange. He was no longer afraid. Maybe it was because he had found out the worst they could do to him. He had survived that. They could not do more, and that much he could take.

If more, he would die. And of that he was not afraid.

So there was no personal fear. Weak as he was, he walked erect.

But the horror persisted. Not only that man was capable of such inhumanity to man, but that these men saw nothing horrible in it. They saw it only as necessary—and good.

Even Samuels. For this time Samuels was in the room. Samuels and others, also Brothers, Kermit thought. Even they could see nothing wrong in this.

Nor in the purpose for

which it was to be done. That was the real horror.

"Well," Samuels said. "Ready for your second lesson?"

"Ready," Kermit answered, his voice steady.

He felt no fear at all. Stranger yet, he felt no anger either. No anger against Servant or Friend. No anger even against Samuels and Father.

Not one of them realised what he was doing. To them the history of mankind was not a process that would result in something great and wonderful. To them it was a static thing, a repetition of the same errors time and time again.

Their answer was the creation of this monstrous ant-society. And in their creation of it they were driven by beliefs and conditioning over which they had really no control.

But whatever the cause—*they must be prevented from carrying out their purpose.* Not only for his own sake, not only for their sake, but for the millions of men they controlled, the millions who were yet unborn. But how?

"Are you going to lie down?" Samuels was asking. "Or shall we use force?"

Kermit lay down. The clamps were on his wrists, on his ankles. Electrodes were being attached to his temples.

How could he stop them?
How?

One man. Alone. Strapped to this table.

If he were free . . . But even free, he was still only one. How could one man have the power to stop them?

He saw the answer then. It lay beneath him, buried deep. It and the others he had helped design and build—the atomic piles that furnished light and power and life itself to the underground cities.

Kermit could visualise them, so they seemed to be directly before him. All the layers, all the damping rods. If he could control them—

His thought was interrupted as a voice said: "Now."

It was like being stabbed through the brain. The shock sent his body straining against the clamps that held him. And when it was over he lay without strength, feeling the perspiration drench him.

Kermit forced his mind back from the threshold of unconsciousness. He had to keep the vision.

It was not a question of

whether he could control the piles. He *must!* He *must!*

He saw the damping rods as though they were before his eyes. Inwardly he gathered the strength for the effort he must make.

"Now," Samuels said again.

"Now," Kermit thought.

The room went dark. There was no shock. There was only silence. And then voices.

"What happened? Someone turn on the switch again!"

There was the click of the switch going up and down. Again and again. The room remained pitch dark.

Samuel's voice came through the blackness. "Open the door!"

There was the sound of the door swinging open. The blackness persisted. Fear stalked the room.

"ENEMY!"

"There is no ENEMY," Kermit said. "Don't be afraid."

"Kermit!" That was Samuels. "I might have known. Get him!"

There was only the sound of laboured breathing "I—I can't move!"

"Don't be afraid," Kermit repeated. "I've only shut off the piles."

Samuels said, fright choking him. "You fool. You've also

turned off our air supply. We'll all be gasping in a few minutes."

"The air supply will continue," Kermit assured him. "You see, Samuels, the wave works."

He let the lights go back on and they saw him sitting on the edge of the table, his wrists and ankles free. Involuntarily, they shrank from him.

"You needn't fear," Kermit said. "There's nothing to be afraid of. With the proper conditioning and purpose I think a great many of us will

be able to use the wave. I don't believe any of us need ever be afraid again."

Samuels' face was as grey as his shirt and trousers. He licked his lips.

"What do you intend to do about—about me, about the Brothers, about Father?"

Kermit smiled gently as he slid to his feet.

"The same as I intend to do about myself and all the rest. We're going above-ground, into the fresh air, the sunshine. We're going out of the ant hill. And we'll never come back."

tomorrow's universe

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Chemical Analysis at Home

Now, what is analysis? From the chemist's point of view everything is composed of one or more (usually more) of 92-odd different elements. The analyst's job is to find out which of these elements are present in the substance he is testing.

The elements can be divided into two groups—metals and non-metals—and the analyst has two distinct methods of testing for these groups. Another branch of analysis tells the chemist *how much* of each element is present, but as this form of analysis is rather complex we shall not deal with it here.

Although most people consider chemical analysis to be a highly skilled task, within certain limits anyone can conduct a reasonably simple analysis and derive a fair amount of pleasure from it. It is necessary, of course, to have a few chemicals and some special bits of apparatus, but these can be obtained for a very small outlay.

Most of the chemicals can be bought in any chemist's shop, and nearly all the apparatus can be knocked up out of wood and such-like. A simple form of filtering apparatus is shown below:



Before starting on the usual scheme of analysis, the so-called "wet tests," one can obtain a fair idea as to the constituents of the test substance by a number of preliminary tests. One of these is simply to heat the substance, at first gently and then strongly. Many substances change colour when treated like this, as the following table shows. In addition, compounds of ammonia give off

this gas when heated; there can be no mistaking its smell.

SUBSTANCE	COLOUR	
	COLD	HOT
Zinc oxide	White	Yellow
Mercuric oxide	Red	Black
Red lead	Red	Chocolate
Tin oxide	Straw	Yellow-brown
Bismuth oxide	Yellow	Brown
Copper chloride	Green-blue	Brown
Copper sulphate	Blue	White
Cobalt chloride	Crimson	Blue

When doing this experiment, you just place about as much of the substance as will cover a farthing (get used to working with small quantities; it saves money!) in a small test tube and heat it in a bunsen flame or on the gas ring. If a gas flame is out of the question, a spirit lamp is the best alternative.

The next preliminary experiment is called the flame test. Here, a very tiny amount of the substance is moistened and gathered on the end of a loop of platinum wire and held in a flame. Many substances when treated in this manner colour the *flame*. There may be no change in the colour of the actual substance.

The flame test is useful because the merest trace of a particular element will give its characteristic colour. The test can be made even more certain by looking at the

flame through a piece of blue glass. The following table shows the results you may get:

SUBSTANCE	FLAME COLOUR	THROUGH
		BLUE GLASS
Sodium	Golden yellow	No colour
Potassium	Lilac	Crimson
Calcium	Red	Green
Strontium	Crimson-red	Crimson
Barium	Light green	Dark green

Another very useful preliminary test is the borax bead experiment. To do this you make your platinum loop red hot and dip it into ordinary borax before heating it in a strong flame. The bits of borax swell at first and then shrink to a colourless, transparent bead.

The bead is dipped in the substance to pick up some grains. It is then heated, first in the outer flame of the bunsen and then in the inner flame.



These are the results you may obtain:

SUBSTANCE	OUTER FLAME	INNER FLAME
Copper	Blue or green	Colourless or red
Iron	Yellow or brown	Bottle green
Chromium	Emerald green	Emerald green
Manganese	Amethyst	Colourless
Cobalt	Deep blue	Deep blue
Nickel	Brown	Grey or black

These are the simplest and best preliminary tests. In a future article we will deal with the systematic detection of the elements, but before ending this section we should consider one of the most important principles of analysis, and that is precipitation.

Under some circumstances, when water solutions of two substances are mixed, a solid separates out. This operation is called precipitation. As an example, let us take a weak solution of silver nitrate and a weak solution of sodium chloride. When these two are mixed, a white precipitate of silver chloride forms.

Thus, by adding sodium chloride solution to a test solution we can tell if silver is present, and by adding silver nitrate solution to a test solution we can tell if a chloride is present.

By means of the apparatus shown in the first diagram, the precipitate can be separated from the *filtrate*, and we can carry out further tests on the latter to see if anything further is present.

The stand is made of wood and should take but a few minutes to construct. In the top flange a hole is cut to accommodate a glass filter funnel, the stem of which juts into, and holds upright, a test tube beneath. The filter paper can be bought as such, or blotting paper (white and clean) may be used.

Another example of precipitation uses a solution of barium chloride. This precipitates sulphates as barium sulphate, and conversely a solution of sulphate will show whether barium is present.

Here is a hint to keep you going until next month. There is enough information in this article to enable you to analyse table salt, glauber salt, blue vitriol, green vitriol, sal ammoniac and plaster of paris. Remember to do each test on a separate portion of the test substance and, when working with plaster of paris, *boil* a very small quantity of it with a fair amount of water to get a solution.

Next month we will give you the chemical constituents of these substances, and will go on to deal with the "wet tests."



FICTION BOOKS

We don't want to give away the plot of *The Humanoids* by Jack Williamson (Museum Press Science Fiction Club, 63 Old Brompton Road, London, S.W.7., 9s. 6d.) because it's fairly good, but it's difficult not to do so without not dealing properly with the inept handling by which the author succeeds in killing it. Basically, the story is about the conquest of Earth (and the universe) by mechanical monsters, invented by a long-dead scientist, controlled remotely from some far-away place.

These robots gear their whole activities around the "Prime Directive," which is "To Serve and Obey, and Guard Man from Harm." The plot revolves around the fact that it is the last of these three injunctions that is most significant in the robots' scheme of thinking. It turns out that practically everything man does can be construed as harmful, even when he likes doing it. And the

robots, available in gigantic numbers, carrying circuits that amount to high intelligence, turn the human race into a set of miserable slaves—or else inject them with a drug that makes them think and feel like euphoric children.

Well, that's an idea. It's a good idea. It could be handled in a way that would bring out the essential relativity of things and values. It could be used to dig deep into man's soul in search of something that had a real and enduring entity. It could be made to throw into high relief the tragic, pathetic attempts by apparently well-meaning people to shield the human race from harm—indeed, it could serve as a basis for exploring the concept of harm; to pin down just what this term means, right now and in the long run—if it *has* any meaning.

But Williamson does none of these things. He uses this quite brilliant and evocative idea merely as a vehicle for carrying a some-

what tedious, pedestrianly written, pot-boiling epic of individual endeavour and sensational events. Here and there the true Williamson shines through, like a bright beam of coldly analytical X-rays, exposing the shadowy nature of man's reasoning and motivation. These passages stand out and seem not to be part of the book; they are so real, so very meaningful. And then we are taken once again into the hackwork of commercial writing and showered with all the ingredients of mundane fiction.

Of course, *The Humanoids*, is not alone in these respects, not by any yardstick. But this book has been selected, presumably, as a fitting title for a science fiction club, for readers who are more or less specialists in this field of fiction. That is what makes this edition of Williamson's novel something that should not have happened. Devotees of science fiction who take the trouble to join a science fiction book club should not have such work thrust upon them.

Shadow on the Hearth by Judith Merrill (Sidgwick & Jackson, 9s. 6d.) shows how it should be done. Of course, we've all come to expect something rather fine in literature that appears under this author's name—and we are not disappointed with this novel.

Like most of Judy's work, it is told from the woman's point of

view—told matter-of-factly, so matter-of-factly that the reader is gripped by the sheer, starkly real power of the unemotional presentation. Judith Merrill makes fools of all those who claim that good literature is primarily a setting down of violent emotions.

Shadow on the Hearth is an apt title, for the story hinges on the dark, appallingly loathesome shadow of an undeclared atomic war falling across the domesticity of an ordinary woman. In the very beginning is sketched, lightly but tellingly, the kind of daily routine this woman, Gladys, follows. It's all very homely, all very pleasant, all rather enviable.

And then the cloud bursts, the balloon goes up, the lightning strikes, but—*slowly*. No sensation here. No flashing and crashing and banging and darting radioactive bullets. No wall of sound. No sheet of fire. Just a shadow. And a feeling: down in the bones; down in whatever lies beyond the seven veils. It's frightening. It's horrible. And it's very real.

Gladys has this feeling. She has her woman's intuition which tells her that something is terribly wrong. More wrong than it's ever been before. She begins to feel that it's irrevocably wrong. But her daughters have to go to bed and they must be fed and washed and talked to. They must be told that

their father will be home soon, even while Gladys is praying to every god there is that he *will* come home. For he is late. Very late. And there is that shadow.

This is a story of war not as usually portrayed with the false heroics of the battlefield, the cowardice that sends men into bellowing action because they are afraid not to go, the brilliant cacaphonic chaos and destruction of irresponsible militants with their artificial glamour—none of that. This is a story of war as it is for those who really fight it, who really have courage, who know the frustrating reality that they cannot do a goddamned thing for freedom and equality and the other things the propagandists pour forth like a last unction. These people, the real fighters, know that all they can do is carry on. It takes courage, it takes endurance, it takes a kind of faith and deep-down integrity that the man with a gun in his hand

hasn't got. And will never have. Because he's weak and cowardly.

The people in Judy's book are so very real. So very human. You know them and talk to them and cry with them and laugh now and then. The things they do are real. The way they think is real. The kind of thing that happens to them is the kind of thing that *has* happened, that *will* happen, in wars.

There are no blood-red spectacles before the eyes of Judith Merrill. She sees things as they are, sometimes good, sometimes bad, sometimes so incredibly sickening that even the strongest faith begins to shake. And she sets it down that way. Her book is not something to enjoy in the pleasant sense of that word. Parts of it will make you want to turn to the wall and smash every mirror in the house. But it's fine reading. It's wonderful science fiction. Because it is so very much in contact with reality. Do please read it.

NON-FICTION BOOKS

Man in Space by Heinz Haber (Sidgwick & Jackson 30s.) is the kind of book we have been waiting for. And now that it has come, we are tremendously disappointed. From the blurb, from the cover, from the size and from the price, one would expect an adult, meatily-technical work, and one that was accurate in all respects. *Man in Space* appears to be none of these. No doubt the fundamental difficulty is that Haber is primarily an engineer; his book is primarily a physical treatise; and he is very shaky on his physiological data.

Ignoring the inaccuracies for a moment, it would seem that the main fault with the book is its predominating attention to matters adequately covered by several other works, and which have nothing to do with the title. There is a long description, for instance, of how the rocket works and how it will be necessary to have a step design for man-carrying vessels. This is all done—and done better—in *Exploration of Space* and *Across the Space Frontier*. Anyone possessing these books, or the knowledge in them, will be bored

by at least three-quarters of *Man in Space*.

Dealing now with the inaccuracies we find the following examples, just a few of those present. On page 29 occurs the statement: "The dangerous cosmic rays are stopped by the air so effectively that they are reduced to complete harmlessness when they reach the ground." The British Empire Cancer Campaign is so uncertain about this that it sends frequent expeditions to the Swiss alps to determine the role of cosmic rays in the genesis of tumours.

Page 34 carries the statement that "In biology, the term *environment* covers the complex interrelation between a living being and the physical, chemical and biological factors of its habitat." First year biology students will know that environment means (by derivation, after all) the "surroundings"; it has nothing to do with the interrelations; that is ecology and behaviourism, etc.

The next page, 35, remarks that "At increasing heights above the surface of earth the density of air decreases rapidly and we are de-

prived, one after another, of all the life-sustaining elements which the atmosphere so abundantly supplies." As far as we know, the only such element is oxygen. Further down on the same page we find: "The existence of the terrestrial atmosphere makes all the difference between our familiar, homely habitat on earth and the rigorous environment of space." Yet, as Haber admits on page 133, "gravity is the most outstanding single factor of our terrestrial environment."

Another inaccurate sweeping statement appears on page 59—"The entire physics and chemistry of the planet (earth) is determined by the field of gravity." Surely even a schoolboy knows better. Then, on page 150, we are told that in the state of free fall man's "sense of touch is gone altogether." But there is absolutely no reason to suppose that touch receptors will not function under those conditions; we can still feel things when we dive into a swimming pool, or fall off a chair.

Where the biological data is not inaccurate, it is too dogmatic. For example, on page 146, it is pedantically stated that under free fall conditions "The heart itself is capable of pumping blood through the body whether the latter has weight or not." No reference is made to the expert view of Dr.

Langer in *Weltraumfahrt* (4), 81-88, August, 1951, who believes that the heart will *not* function in free fall.

So it is that where the book *does* deal with physiological matters—and they are very sparse—it does so inaccurately. However, for those who want to know how rockets work, this book has the answer. But, then, so have many other, cheaper, works.

Quite a different proposition is *Flight Into Space* by J. N. Leonard, Science Editor of *Time* (Sidgwick & Jackson, 12s. 6d.). This book is an impersonal, unbiased investigation into the whole present American set-up where space flight is concerned, and into the theoretical considerations involved. Written in a style that will captivate all but the most unperceptive, *Flight Into Space* covers just about every topic that could arise in the mind of an interested person—and covers it in a scientific, unsensational manner. Here and there, of course, there are points on which not everyone might agree; but they are pointed out as such and not put down as facts. The title page bears the legend—*Facts, Fancies and Philosophy*. The three are carefully distinguished in the text. Thoroughly recommended.

This is a rather belated review of the book *Space Travel* by Kenneth Gatland and Anthony Kunesch (Wingate, 15s.). Yet, though the book was published last autumn,

we cannot ignore it, for here we have a splendid example of popular science that is true to science, and one that deals in most excellent fashion with its title. Ranging from a short history of rockets, through all the many aspects of space flight, right up to the possibility of reaching the stars, this book really covers the field in a way that no other book has done. It should have been a Book-of-the-Month choice. Its only marring factor is a number of rather poor drawings. The many photographic illustrations are very good. We recommend this book above all others of similar theme.

Two very interesting Penguin Books have just been published, and we strongly recommend them both. *Animals and Men*, by the late Professor David Katz, is an enthralling account of the results of experiments in animal behaviour interpreted, as far as possible, in a way that increases our understanding of human behaviour. Professor Katz was one of the

greatest authorities on psychology and behaviour, and he brings to this book his full talents as an observer, as a commentator and as a writer. One of the most intriguing things this book shows is how easy it is to misinterpret the behaviour of creatures we do not really understand. Let us hope that our spacemen will have learned this lesson before they begin to deal with men on other planets!

Viruses and Man, by Professor F. M. Burnett, contains all there is to know about viruses on the popular level. Naturally, from the title, the emphasis is on the relations between viruses and humans; but even so, the book manages to get over many of the fundamental principles of virus biology—and does it in a way that makes absorbing reading to all who are intelligent enough to wonder exactly where these half-living, half-dead creatures stand in the scheme of things. Reading this book, we realise that viruses aren't so bad after all! Both books cost only 2s.



Projectiles



WHAT!

I'm not just a moronic subhuman, but don't you think we could have a bit of space opera now and then, or at least a trip to the Moon?

Keith R. Bradley, 25 Middle Avenue, Loughborough, Leics.

Space opera? In Authentic? Keith, do you want the Sun to stop rising and the stars to drop from the sky? Seriously, most readers feel that space opera is readily available in other British magazines and prefer us to avoid it. Sorry.

MIND? NO, MATTER

I've been a science fiction fan for a good many years and I think that *Authentic* is the best "home-grown" product obtainable. Furthermore, in my opinion, it ranks with the best of the trans-Atlantic magazines in the field. Naturally, I have one or two small

criticisms to make, unimportant in themselves, maybe, but they may perhaps help to improve an already top flight magazine.

The general tendency in the majority of science fiction magazines is toward the "psychological," especially over the last two years, and I notice it has begun to creep into *Authentic*. Personally, I think this type of story is the speciality of but a few writers who can do it justice. Therefore, I would prefer to see it played down as much as possible.

And since you are "authentic" a few more stories on the lines of *Subtle Victory* (No. 39), with emphasis on the medical aspects of space travel and the problems to be expected in an alien atmosphere, would be welcome.

1230921 Sgt. Dunham, A. W.,
71 A.M.Q., R.A.F., Feltwell,
Nr. Thetford, Norfolk.

A nice letter, Sergeant, and we find it difficult to say whether we agree or not. If you'd said cut out psychological stories, we would

certainly take up cudgels with you, but as for cutting them down, well, we'll see. And we'll certainly publish any "medical" story that comes along, provided the literary quality is high enough.

ROCKET FUND?

When is someone going to go to the Moon? I believe it is technically possible, and only requires funds. Surely, of all the millions of pounds which annually are poured down drains, and burnt up and generally (as we all admit) squandered, some small proportion could be diverted for a fund for this purpose. We all know how, in some countries, scientists are hog-tied by Security laws; but I'm convinced that, if private individuals the world over were to put up the money, "love would find a way." Somewhere, somehow, the scientists would get permission to launch their rocket. What do *you* feel about that? If any lead can be given towards achieving this thing, it is people such as yourself who can give it.

R. C. Hope, 266 Pershore Road,
Edgbaston, Birmingham 5.

You raise interesting and difficult questions, Mr. Hope. Let's not fool ourselves: scientists in all countries are restricted by security regulations. A great deal of rocket research is going on in this country today that is not allowed to be made public, though public money is paying for it. Your "fund" is already in existence—in the form of appropriations out

of taxes to the Air Ministry and other Ministries. And can we say that this security blanket is wrong? Can we say that scientists should be allowed to work on whatever they wish and to make their work public? Especially when their work impinges on something that is intimately connected with our political entity? But be assured of this—the Big Powers of this world are, at the moment, putting nearly everything they've got into a race to the first space vessel. Nobody's holding up progress.

FROM THE EAST

Man is already reaching out for the stars. And the end of this century may see him successful in his strivings. The day is not far off when Earth-bound man will shake off his shackles and literally soar into the Heavens and reach the objects of his search—the stars, the planets, other worlds and other universes! The whole cosmos will be his playing field. And what new life, ideas and values will he find?

India of a century ago and India of today are vastly different. Contact with other nations has changed the Indian's superstitions, beliefs, values and way of life. Impact with other worlds will alter a thousand values, ideologies and religious beliefs of people all over the world . . .

H. S. Siddiqui, 35 Wellesley Road,
Poona—1, India.

We believe you are right, Mr. Siddiqui, in the implication that

widening our physical environs will of necessity widen our mentality. The whole of terrestrial culture—which includes religions and ideologies—has been developed under fairly limited fields of reference. There can be no doubt that the fundamental non-absoluteness of all human values will be clearly revealed by contact with other worlds. Perhaps then, at last, we shall see the end of the illogical doctrine of “eternal verities.”

INCONSISTENT

It strikes me that it has been a feature of *Authentic* never to remain consistent; inasmuch as one can read a particular issue, feel utterly chagrined that such stuff can appear between covers, then, before the feeling of desolation has departed, another issue comes along that makes excellent reading. Because of this, I should imagine your readers' letters are a well-balanced mixture of deep despair and wild exuberance.

Nevertheless, the consistency of issues 34, 35 and 36 has remained high, and I am keeping my fingers crossed that this standard will continue or even improve. I am particularly surprised at the emergence of Bryan Berry as a good teller of stories, as against his previous mere writing of plots. His *The Tree* cannot be compared with some of his earlier work, and I am pleased to see that your perseverance with this author has borne fruit.

Another feature of *Authentic* that I have noticed is that the

Readers' Pages are quite often as good as the stories themselves, and it is this section of the magazine that I always read first.

P. W. Cutler, 333 Arundel Street, Landport, Portsmouth.

Your letters are always most interesting and helpful, Mr. Cutler. We only wish you would send more. We hope you feel that we are improving our quality with each issue now—one result of our policy of paying the highest author rates among British science fiction magazines.

FANTASY

It was my intention to give up this magazine on your change to fantasy, but as I had previously regarded *Authentic* as tops I was reluctant to think that with the name *Authentic Science Fiction* you would leave the science fiction ranks for good, bearing in mind that psychology is not the only science.

S. Bigsby, 102 Allcroft Road, London, N.W.5.

What on earth are you driving at, Mr. Bigsby!

PROBLEMS

My actual reason for writing to you is because I have a few problems of my own and I hope that you can help me with them. My first one is that I have a passion for reading science fiction but have

no real scientific knowledge, consequently I am always coming up against words which are meaningless to me and which I can't find in the dictionary. Can I overcome this difficulty in any way?

Secondly I'm just an ordinary housewife and cannot afford to buy the number of science fiction books I would like to read. Can you tell me if there is a science fiction library in my part of the world?

Thirdly, my husband is not interested in science fiction and I would like to meet other people who are. Is there a club or meeting place where such people get together, discuss and latest scientific developments and swap magazines?

Mrs. D. Harrison, 26 Merlin Crescent, Edgware, Middlesex.

Your first problem we will solve for you, Mrs. Harrison, by sending you our Science Fiction Handbook—which ordinarily is available only to subscribers. This will give you the meaning of most terms you will find in science fiction. Secondly, we know of no library in your district, but a postal library is operated by A. C. Thorne, 21 Granville Road, Gillingham, Kent. We can recommend it. Your third problem you can solve by coming along to The Globe Inn, Hatton Garden, London, E.C.1, any Thursday evening. There you will find an informal meeting of London fans, with magazines and books galore, for sale at low prices and for swapping. Authentic's editor is there most

weeks. We'd be pleased to see you. Now you're all set!

WHY, OH WHY!

Why do you publish some of the tripe you do? Admittedly, you have had some brilliant originals—*The Rose, Manna from Heaven, The Tree*, etc., but what other originals have you had which can ever be considered good?

Robert Clark Jnr., 3 Merton Road, Sale, Cheshire.

Bobbyl

SHOCK

In your article in No. 37 you refer to the "Supermancon" and state that Birmingham fans have promised their support. I wish you would put them in touch with me. We have been trying to form a club for some time and there was a very good start, but after a let down by the organiser it practically fell to pieces, with just a few of us trying to rejuvenate without much success. I do hope you can provide the much-needed "rocket" and shock Birmingham out of its complacency.

Dennis Egan, 31 Wigorn Road, Warley Woods, Smethwick 41, Staffs.

This kind of thing seems to be happening quite a lot up north. We've been told that the organisation behind the Supermancon, that was to be held next Whitsun, has fallen to pieces in effect. Certainly, Eric

Bentcliffe, one of the leading lights, resigned from the Committee owing to personal differences. And certainly this office has had no word about the convention for many months. Apparently the northerners, unable to comprehend the unity of London fandom, have now fallen out among themselves. This is a great pity, is quite avoidable and is something of a disgrace to British fandom. We only hope the northerners will give us the lie by forming a thriving club and coming to life again over the convention. Pull your socks up, Birmingham and environs! And put away your water pistols! (If that doesn't shock them, Mr. Egan, nothing will!)

BIG ALREADY?

Why say of Bryan Berry that one day he will do something really big? It somehow gave the impression that *Adaptable Man* was not all that it might have been. I found the story absorbing and will be satisfied if Mr. Berry keeps the same standard in all his work.

William Hill, 24 Constance Crescent, Hayes, Kent.

*Well, we won't be satisfied, William! Nothing will satisfy us but a continual improvement in quality among our authors. We believe that nothing is ever perfect, and one of the aims of a magazine is to strive towards perfection: that way we get better and better. And we don't delude ourselves about the quality of stories like *The Adaptable Man*. It was not great literature. We think Berry may one day write great*

literature. That is what we mean by something really big. See?

COVER

Oooo . . . that cover . . . that cover! Now what is my verdict? Is it to be good or is it to be bad? The axe falls . . . it's terrific! Terrific with a capital "T." It's the best piece of art I've seen on any zine. So British. And not cluttered up with pop-eyed monsters; no beautiful damsels in the famous American bikini space suit; no over-built muscle men wearing skin-tight space suits. Oh, so realistic. A straight-forward painting of a great scene.

Don Allen, 3 Arkle Street, Gateshead 8, Co. Durham.

Don, we blush and bow and kneel before you! Such praise encourages us to continue with the good work, knowing that we are appreciated. Thank you.

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You have now, after trying for a long time, *the best* science fiction magazine published in Britain today. But that is not good enough. You must also have one good enough to beat the British editions of American magazines which are now offered at the same price as yours.

Michael R. Birrell, 10 North Street, Hastings, Sussex.

Stick around, Michael, and keep your eyes peeled. All you have to do is wait for it, and you'll soon be writing to tell us we've done it. That's a promise!



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shows an early stage in man's first landing on a planet other than Earth—Mars. High up above Mars, the 'dumbbell' ship shown on last month's cover circles in a close orbit; it is the mother ship of the sleek, air-to-space rockets we see touching down now.

From these rockets men have unloaded prefabricated sections of the early, rather primitive base. The men wear space-suits because the Martian atmosphere is low in oxygen and high in carbon dioxide. But once they have erected the plastic domes — which are elastic and distensible — and started up the pumps that will concentrate the oxygen of the Martian air, they will be able to remove their suits and relax for a short while.

Under the domes they will grow food hydroponically — that is, by soil-less culture — from seeds brought from Earth. They will set up an observatory and a survey station, and they will radio reports to Earth. On Earth more expeditions will be formed and sent to Mars, until the colonial base there boasts many men and many buildings. A city will grow from the small base pictured here—just as London, Toronto and New York grew. And the time will come when children born on Mars will ask: "What is Earth like, Mummy?"

But before then, ships will have moved on and out to other planets, other worlds, right to the end of the solar system. Bases will be set up along the way. Next month we shall see a completed base, on Triton, moon of Neptune — point of departure for the stars!

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